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The Dull Season—What Next

"Man never is, but always to be, blest." You, doctor, are always going to "look carefully and thoroughly" into some of those old chronic cases that have been coming to you for months, perhaps years, but somehow or other you never do. Some day—when you "get time"—but you never seem to find the spare time. Always the urgent, pressing case seems to claim your immediate attention and pushes aside that less acute problem until some more convenient season. And, so, these unfortunate patients keep coming to your office, day after day, week after week; and you temporize and temporize, giving them palliatives and encouragement, always with the full intention of studying out their cases when you get a little more time. They never are, but always to be, cured.

Why not begin to face these difficult and obscure problems now? The dull season is at hand; the time of year when, if ever, you will have a little respite from the more urgent phases of your work. Perhaps you are thinking of going away to the city for a month or so during the summer and taking a post-graduate course somewhere. Perhaps you would like to, but can not.

Probably, doctor, it never has occurred to you that you have a splendid opportunity and ample material for a postgraduate course

right in your own home town, in these very cases which for so long you have been meaning to investigate. Yes, this is the very opening you have been looking for. Here, at your very door—your very own, in the intimate sense that a doctor's patients are his own people—are a dozen puzzling clinical problems waiting to be solved in a way that nobody but you can solve them, and offering all the field for your efforts in research and experimentation that you are likely to demand for the next month or two, to say nothing of the satisfaction to yourself and the gratification to the patients, as well as enhancement to your reputation that will come from such work.

It really isn't necessary that you should make a trip to a distant city and hang around a college or a hospital in order to get a post-graduate course. After all, one doesn't acquire very much information by sitting open-mouthed in an amphitheater, watching a professor work.

Everything of real, utilizeable value that you get out of such a course you get by digging for yourself. But, you can dig for yourself just as well at home. Certainly you have ample soil to cultivate; and, in any case, it will not be a bad idea to spend the slack months of the year on this ground once in a while.

In these day of modern facilities, you can have all the assistance and suggestion, and the advantages of other and better men's experience that you desire. There are books on any subject you may be concerned with—excellent books, clear, concise, up to the minute, which an overnight mail will bring to your door. Laboratories and other clearing-houses of scientific investigation stand ready to lend you aid, all within reach of the same convenient postal service. There is hardly an agency of diagnosis or therapy that does not lie as ready to your hand as though you stood in the center of a system organized for your special behoof—as, indeed, you do.

Why not, we repeat, put in some of your comparatively leisure time this year working out some of the problems presented by these obstinate chronic cases, first diagnostically and then, of course, therapeutically? There is that old case of acne or of eczema, for a starter, that has been wearing out your own and the victim's patience for the last year or more and defying all the routine measures that you could call to mind—suppose you get busy with some good biologic laboratory and have an autogenous vaccine made from the discharges, and see if you cannot, so to speak, get *under* the skin that you have been hopelessly attacking from the *outside*, and stimulate the disordered body to elaborate its own defenses and whip the enemy out? Don't forget, of course, to assist the body-defenses with appropriate medicinal and hygienic therapy. Get into touch with a good laboratory, cooperate with each other, and lay systematic, intelligent siege to the case together. Work it out.

That equally tedious and unresponsive case of rheumatism—give that a little studious thought, too. Draw upon every diagnostic resource that the modern laboratory affords, to run down the underlying morbid factor in the disease. Camp on its trail like a detective hounding down a criminal. As likely as not, you eventually will find that you have some sort of chronic infection to deal with, perhaps a gonococcus, perhaps a streptococcus, possibly two or three of these offenders; and you may further find that a bacterin of whatever type you discover will furnish just the stimulus that will turn the balance in the patient's favor and lead to a recovery which medicines of themselves could not bring about; or, perhaps, the removal of some intestinal cause, which, à la Lane, gives rise to fecal absorption and autointoxication; or the removal of diseased tonsils may bring the long-sought relief.

Whatever it be, go after it, thoroughly, systematically. Make a postgraduate course of it, a research campaign. You will find yourself actually working up an enthusiasm over these old "chronics" toward which you imagined you had got hopelessly "cold feet." You will get lots of genuine fun out of it; the kind of fun that a man gets in doing the work that he likes, and getting paid for it, besides.

No doubt you will get paid in money for a great deal of this work; still, paid or not, you will be amply repaid by the knowledge and illumination that you derive from the sheer excavating that you have been obliged to achieve.

You will make several discoveries and form several habits that will be of incalculable value to you in your busier campaign in later summer and winter. You will discover a realm of diagnostic and therapeutic resource you never dreamed existed—applicable to cases upon which, you had thought, the ingenuity of diagnostics and therapy had long ago exhausted itself. You will realize the immense dynamic power that a physician develops from connecting himself with a live modern clinical and biological laboratory, where all these modern miracles are being worked out at first hand. And you will get the habit of looking for resources outside the old conventional lines in which you have been accustomed to seek them, and of entering into offensive and defensive alliance with all the modern facilities which are a necessary part of the present-day physician's resources.

Get busy, doctor, and see how many of your difficult chronic cases you can get cleared up by the end of summer.

If there is one thing that you may certainly rest assured about, it is this—that you will never get big results without expenditure in some form or other. Everything must be bought.—Sir John Collie.

WHY NOT THREE YEARS?

When you are renewing your subscription for CLINICAL MEDICINE, why not send in \$5.00, to cover the reduced price for three full years? In that way, you will avoid a lot of inconvenience and, besides, will be assured of receiving your journal regularly for thirty-six months; incidentally, you also will be saving some money. Surely, you want your CLINIC, and you will continue to want it. Why not, then, make the next remittance \$5.00?

By the way, we hope a lot of our dear friends of the "family" will help us extend

the good work of CLINICAL MEDICINE by persuading some of their friends to subscribe. If every man who reads these lines would just say to his confrère across the street, "Say, Doctor Jones, you do not know what you are missing by not taking CLINICAL MEDICINE—better let me send in your subscription together with mine," he would, we believe, win the lifelong friendship and gratitude of that man, while we cannot begin to tell you how much it would please us. Why not do it?

How do you know that the pilgrim track
Along the belting zodiac
Swept by the Sun in his seeming rounds
Is traced by now to the Fishes' bounds
And into the Rain, when weeks of cloud
Have wrapt the sky in a clammy shroud,
O vespering bird, how do you know,

How do you know?

How do you know, deep underground,
Hid in your bed from sight and sound,
Without a change in temperature,
With weather life can scarce endure,
That light has won a fraction's strength,
And day put on some moment's length,
O crocus root, how do you know,
How do you know?

—Thomas Hardy.

THE SIXTIETH BIRTHDAYS OF EHRlich AND BEHRING

The middle days of March achieved this year a special significance, from the fact that Prof. Paul Ehrlich completed his sixtieth year on the 14th, and that Prof. Emil von Behring celebrated the same anniversary on the 15th of the month. In accordance with a pleasing custom, which, taking its inception in Germany years ago, has since been adopted in other countries, the principal German medical journals have celebrated these events and given testimony of the gratitude and veneration which is felt, the world over, for these mighty giants of science, by issuing special *festnummern* in their honor.

The *Berliner Klinische Wochenschrift* for March 16, the *Deutsche Medizinische Wochenschrift* for March 12, and the *Muenchener Medizinische Wochenschrift* for March 10, are dedicated to the two celebrities who have exerted such an important influence upon the scientific progress of medicine, and for whose labors and acquirements our ability and power of relieving suffering and disease and of prolonging life has been of such paramount importance.

It would be a pleasant task to review these special numbers of the three most important German medical weeklies, if it were not too

late for the May number of CLINICAL MEDICINE. So, it must suffice to say that they bring contributions from the leaders of medicine all over the world: from men like Metchnikoff, Roux, Maragliano, Simon Flexner, Noguchi, Alexis Carrel, Babes, Pawlow, Roemer, Lesser, Wassermann, Morgenroth, Hans Sachs, Hans Much, Charles Richet, C. J. Salomonsen (Copenhagen), P. K. Pel (Amsterdam), and many more.

The careers and the accomplishments of both men are such that we can only bow down and offer our homage to their masterly guidance; we can follow where they lead, thankful that under their leadership our power to do good and to relieve and prevent harm will be increased. May they live long to continue their important work in the service of humanity.

A SKIN ERUPTION AND BLOOD POISONING!

One day this writer sat in the office of another doctor, a woman, and saw her patients, as they came in. The telephone rang, and the person calling asked for treatment for a child sick with measles. The doctor looked surprised, as there had been no measles in that neighborhood, and she directed the parents to bring the child over for examination. It was a misty, drizzly day, and their home was in the country, two miles away; still, they bundled the boy up and brought him.

The eruption—as revealed when they arrived—was a fine, mottled scarlatiniform rash, and was general, simultaneously developing over the entire body. The tongue and throat were not scarlatinal, although the tonsils were swollen, the left one especially, and the throat reddened. Very little fever was present, but a day ago it had been severe. The left hand was tied up with a jagged injury from barbed wire. Uncovered, it showed an ugly infected wound, suppurating, with reddened induration surrounding it. The axillary glands were inflamed. What was supposed to be measles, therefore, was an erythema consequent upon blood poisoning.

The doctor prescribed carbolized poultices continued until the wound was clean, followed by wet dressings, also carbolized. Internally, quinine, 3 grains three times daily.

The personal experience of this writer, in the case of such infections, has been that, no matter how many or how large the secondary abscesses may be, the virulent infection resides in the original wound, and that this demands the most thorough disinfection.

Doctor, what would be your treatment of such a condition; seen, as this one was, for the first time? There are few, if any, topics better worth general discussion than the treatment of infected wounds.

While upon this topic, the writer desires once more to call attention to the amazing powers of the Bulgarian bacillus locally applied. He already has recorded one case of chancroid cured in two or three days by applying tablets containing this organism, crushed to a coarse powder. Since then he has been applying these in another case, with quite as extraordinary results. But, before recording it, he is anxious to hear from any physician who also has employed these tablets locally.

I went by the field of the slothful,
And by the vineyard of the man void of understanding;
And lo, it was all grown over with thorns,
The face thereof was covered with nettles,
And the stone wall thereof was broken down.
Then I beheld and considered well,
I saw and received instruction.
"Yet a little sleep,
A little slumber,
A little folding of the hands to sleep"—
So shall thy poverty come as a robber,
And thy want as an armed man.

—The Bible.

KOREAN THERAPEUTICS

Dr. Mary S. Stewart, a medical missionary who has made a reputation for herself and gained honor for American medicine by her good work among the women of Korea, contributes a curious bit of native therapeutics. Thus, among other things, she writes:

"There is a much used prescription here for delirium tremens, pulmonary tuberculosis, dropsy, and so on: 'Catch a blue snake alive, put it in a bottle of fresh new wine, bury this bottle in the earth three feet deep for three months, then drink the wine; and, if you don't get well, you die.'"

There is more than a rude superstition in this—underlying it is the sentiment that the victim of an incurable malady should be relieved of the suffering, and the relatives of the burden. Delirium tremens may not exactly be incurable, but the drunkard who after three months should still be in need of such a prescription may come pretty near to exhausting the patience of his family. We need not go to the antipodes for illustrations—this writer recollects the Irish woman who gave her husband a teaspoonful of croton oil to cure him of the whisky-habit—she said it would kill or cure him—"dom'd if she cared which."

As to pulmonary tuberculosis: A woman once called upon this writer to come to her daughter, the last of her family, given up as hopeless and to die within a month. Said the mother: "I know she cannot be cured. I want you to use all your power to keep her here to the last possible day, and keep her comfortable and happy." That sick woman lived nearly eight months longer. Every day when I examined her she asked, "Is it today?" I replied, "Not today." Then a smile of content would overspread her countenance, as she knew that Death was being held off until some tomorrow. I am sure that never until then had I realized what a day more of life meant.

It has not been long since the whole country was startled by the report that members of a religious sect had put to death one of their numbers who was in the last stages of an incurable malady. For a time there was talk of a prosecution for murder, but common sense prevailed. Assuredly—the thing was wholly indefensible, no mortal has the right to take human life except as a penalty for broken laws; but—have ever you sat by the bedside of your best-loved one, who was dying of absolutely hopeless inoperable cancer?

American or Korean, cultured or savage, human nature, in the ultimate analysis, is much the same.

THE TREATMENT OF WHOOPING-COUGH

Pertussis, a specific infectious malady, contagious and epidemic, extremely common, remains obscure in its essentials despite numerous researches. Ribadeau-Dumas (*Ann. de Med. et Chir. Infant.*) enumerates a number of microorganisms to which whooping-cough has recently been ascribed. Each of these organisms has been discovered in the sputa of the patients and some have been cultivated, but none has induced the malady or its lesions experimentally; neither has any of them communicated to the blood the special properties of pertussis.

The work of the bacteriologists has developed some curious hypotheses. Thus, for instance, Czerny looks upon the malady as a nonspecific catarrh, together with a psychic infection. So, also, Lesage and Collin find, in abnormally prolonged cases, a simulation of the paroxysms that can be cured by means of psychotherapy.

However, Bordet and Gengou found in the sputa a microbe which is now generally

believed the specific inciting agent. These microbes can be detected only at the very beginning, the sputa later becoming polybacterial. This discovery has been followed by the usual therapeutic applications.

Dulhoit, for example, employed the Bordet-Gengou serum in many cases, using doses of 30 Cc. many times repeated; and established the innocuity and good effects of such dosage. But Klimanko denies the curative properties of this serum therapy. His serum, in the hands of Ribadeau-Dumas, did not prevent the development of the malady; nevertheless, it favorably modified the symptoms. It is probable that, while this microbe initiates the malady, the production of the morbid phenomena is largely owing to other organisms, and a polyvalent serum may prove to be requisite.

In America, clinicians have employed vaccines, inoculating the patients with dead cultures of the Bordet-Gengou bacillus. Thus, Graham treated 34 children, injecting 20,000,000 microbes every four days, then every three days and secured amelioration in 17 cases. Others used the vaccine in 40 cases, and in 10 as a prophylactic. Of the latter, only 1 patient developed pertussis, which in this instance lasted only one week; and 7 had noncharacteristic coughs. The vaccine acted favorably if employed at the very onset in uncomplicated cases.

The best that can be said, from a study of these cases, is, that on the whole the impression is favorable to the bacterin method of treatment.

Nicolle and Cornor employed live cultures in 122 children, obtaining 37 cures, 40 ameliorations and no results in 27. Neither the patient's age nor the period of the attack made any special difference in the results.

The bacteriotherapy of pertussis can be judged only when many more cases shall have been recorded and studied. Meanwhile we still must have recourse to antispasmodics and antipertussics. Among these remedies, belladonna, grindelia, and drosera still are adhered to by many. Triboulet and Boye inject morphine even in infants of three months, excluding only albuminurics. This latter remedy does not act in complicated forms; however, in simple pertussis vomiting has ceased after the first injections given, and in their hands the cure was completed in only six weeks. At least, in prolonged cases, with paroxysms violent, frequent and persistent, morphine gave excellent service.

All of which, to say the least, gives very little encouragement to the clinician who is

familiar with the use of the two remedies for whooping-cough developed in America. Hyoscyamine, to moderate mucous irritability, and calcium sulphide, as an antimicrobial—what more is to be said about the treatment of this disease! As a treatment, the two remedies make the little patient comfortable and shorten the duration of the attack; as a prophylactic, they have been tried so often as to leave no question of efficacy; while, in both respects, the results are uniformly and decidedly successful.

A man who is in the dumps can say to himself: "Come now, brace up! Be cheerful!" but that will not make him so. What he can do, and do successfully, is to make himself act the way a cheerful man would act: to walk and talk the way a cheerful man would walk and talk, and to eat what a cheerful man would eat—and after a time the emotion slips into line with his assumed attitude. He actually becomes what he has been pretending to be.—Luther H. Gulick.

SPECIAL FEATURES FOR THE NEXT TWO MONTHS

Next month (June) we purpose to devote a good deal of space to the discussion of the alimentary diseases, especially those peculiar to the summer season. We sincerely hope that every reader who can give us something helpful about diarrhea, dysentery (in any of its forms), colics, indigestion (gastric and intestinal), cholera infantum, cholera morbus, or on any other subject falling under this general head, will sit right down and write us a nice little article on what he has found out. We are especially anxious to get brief, crisp records of personal experiences or helpful points in diagnosis and treatment. Only, please, boil them down to essentials.

Then, in the July number, we want to discuss the doctor's vacation, or rather we want our readers to discuss that subject. Tell us about some of the vacations *you* have had, about the automobile-trips, camping-trips, long drives or hikes, trips to the seashore or to the mountains, fishing-trips, hunting-trips, sea-voyages, European trips, in fact, anything or any good way to spend a vacation and just what is needed to do it most pleasantly, profitably, and at the minimum of expense.

Everyone who has an idea that will tend to help the other fellow is most earnestly invited to write it out for publication. Also send pictures, to go with your little article; kodak pictures will serve nicely. Please help the other fellow, and help us at the same time. Do not wait until the last minute to

prepare your article, but send it in right away; and if too busy to polish it up, we'll do that for you gladly.

The longer on this earth we live
And weigh the various qualities of men * * *
The more we feel the high, stern-featured beauty
Of plain devotedness to duty.
Steadfast and still, nor paid with mortal praise,
But finding amplest recompense
For life's ungarlanded expense
In work done squarely and unwasted days.
—James Russell Lowell.

GET A MOVE ON

A body in motion always overcomes one of equal mass at rest. The man who does things always gets ahead of the man who does nothing. Of men of equal capacities, the one who gets out and tries to do anything may make mistakes and be laughed at, while the other keeps under cover and avoids the peril of failure. The doer tries again, and yet again, and there comes the time when he does not mistake, but succeeds. Then, when the community needs somebody to do such things for the public welfare, it turns to the man who has had experience. The failures are forgotten; the man has a reputation for persistence. The other man may have admirers who assert that he might have done better if he had tried, but the fact that he did not try is against him.

Well, what of it? Why these platitudes, these axiomatic observations that teach nothing, repeating only, as they do, what everybody knows? They may have been in our fourth readers.

It is, because the world still needs these truths; still forgets them; still fails to realize them, to live them, to turn their concrete wisdom into the current coin of their daily lives. Because the most ultraconservative class in the community are the doctors—the last to take up a useful innovation, the hardest to be convinced of its utility.

While you are waiting for the serums and bacterins to be perfected, your rival has been winning a reputation by using them. While you are waiting for the Council to pronounce on the newly offered remedies, the man of action has rolled up an experience with them—an experience that powerfully influences this selfsame Council and prevents what otherwise might have been an unfavorable verdict. While you wait for automobiles to be supplied for ten dollars, your young competitor beats you to every case of accident or emergency; and when he is there he never

has had any better remedies than yours—and the people know it.

I have mighty little respect for the doctor who lets others take his business from him and then bewails their unethical methods. The Book says: "Be diligent in business," and that means far more than getting into a rut, a routine that goes along of itself with very little exercise of one's gray matter to keep it moving.

If there is any vocation on this broad earth that demands the use of every gray cell in a man's cranium, it is that of the doctor. Rightly so, too, for he is responsible for the welfare of his patients. He ought to study, to keep up and even get a little ahead; and if he doesn't, it is good for the community if some other doctor comes along who will.

Here are a bunch of new ideas as to therapeutics—who is to say whether they are good or bad? Who, if not you? Don't leave everything to the Council, the "authorities," and expect them to chew your mental food for you. They are only men, and fallible; and they are capable of doing only so much, seeing so much, securing just so much opportunity. You are in a better position than they to try and to judge, for you have the patients right under your own eye, and you know their personal peculiarities that modify the effects of treatment.

There isn't a man who has such chances for doing good work for the profession as the family doctor. All the work of the famed laboratories is only a preparation and an aid to him. His is the holy of holies, the arcana, the summing of the work done for him by all the rest. He is the Chief Justice of the Supreme Court of Medicine. He applies the acid tests to the product turned out by the great men, and ascertains whether it is true or base metal.

Doctor, do you know how much you have taught me? How many times you have set me right when I had strayed into a wrong road? How many times my theorizing has been straightened out and made practicable by your experiences? When I get enthusiastic over some brilliant suggestion, I always wait till I hear from the field before I presume to urge it on the medical masses. If about five hundred of you write to me that it is all right, I go ahead with confidence; but if five hundred more tell me it is no good, I draw in my horns.

The confidence with which I have advocated certain preparations is based upon this fact. One, two or six great men may denounce a remedy; but I have one, two or three thou-

sand reports, covering every possible phase of its application; and, great as the objector may rank, I know that I can teach him a whole lot about it. His objections have been met; his modifications have been tried out; his fears have been proved ungrounded by numerous actual trials. The deductions he had made after observing one, ten or twenty cases have been corrected by observations on ten thousand; and, incidentally, his cases may have been shown to be exceptional in character.

Get busy. Don't wait for the other fellow, but courageously butt right in and do the thing yourself. Do it, and report. Do this three times, and then, when someone wants to know about that thing, he will recall your name as that of a man who has specialized in that direction. One of our dear friends once published observations on cockroaches. Years later he visited a great eastern specialist, and was greeted at once as the man who had written so entertainingly about that predatory blatted orthopterous "varmint."

I should like to specialize on the first case that applied to me; but, if none did apply, I should specialize on the sanitation of my neighborhood. *I would be heard—and known.*

Every man has in himself a continent of undiscovered character. Happy is he who acts the Columbus to his own soul.—Sir J. Stevens.

THE ZEITGEIST

The Zeitgeist! What a pregnant, meaningful word! How shall we translate it into English? Certainly not by any equally short and significant word, for the English language does not contain it. Once in a great while it is given to some genius, by a flash of inspiration, to coin a word, or a term, or a definition out of the very stuff of the thing defined or named, which thereafter is unique, inimitable, neither to be copied nor counterfeited, like the thing itself.

Zeitgeist is such a word. It is no more to be translated, or even paraphrased, than Bergson's *élan*. It is, in fact, the same word from a different angle. What the *élan* is to the flux of the physical universe, the Zeitgeist is to the process of sociologic life. "The spirit of the times" is but a poor, shadowy wraith of all that the Zeitgeist signifies. Tide would be a better word. For, using this word as touchstone, the spirit of the times serves only to indicate the surface movements that result from the tide, and make it manifest, or at best the tidal wave

which occasionally rises and engulfs the age; but the Zeitgeist stands for the tide itself and all the current and undertow of which it is the net resultant.

It is the Zeitgeist which every great man, every man of destiny, in every age, consciously or unconsciously comprehends and allies himself with. It is the Zeitgeist that every successful statesman senses and interprets—differing therein from the politician, who concerns himself only with surface swells and ripples. It is the Zeitgeist that every great artist and novelist, in every period, has caught and visualized for the everlasting instruction of those who come after. It is, in fine, the Zeitgeist with which, to a greater or a less degree, consciously or unconsciously, every man Jack of us must be in temperamental sympathy and active cooperation if we are moving along with the times, since the Zeitgeist is at once the net motive from which all such movement springs and the end toward which it moves.

No man can properly evaluate his own calling and work or efficiently shape his own part in it if he does not get at least a general perspective of its relation to the Zeitgeist. The unthinking masses, of course, know nothing of the Zeitgeist, still less of any relation that they themselves bear to it—consciously, I mean. They are unwitting, more or less passive, participants in it; helping to make it, to be sure, but not knowing what they do. But the thinking man, and especially the man who is engaged in some particular form of work having a more than common influence that moves to and from the sociologic process of his age, can hardly escape the contemplation of his own particular calling in its relation to the Zeitgeist.

What is the significance and the interpretation of the Zeitgeist in its relation to medicine? What are the tides—or, rather, what is *the tide*; for there is ultimately but one net movement, orientating all the component tides—what, I ask! is the tide along which medicine is moving toward its destiny? And what is the destiny toward which it is being borne? For answer, we must ask the still larger question: What is the tide and what the destiny of the whole seething, restless body-social?

Body-social. The very word, I think, should lead us to expect the denouement which is being borne in upon us by every sign of the time. For what is the elementary significance of a social system but the recognition of the principle that no man lives to

himself alone, and the practical acknowledgment that each man's welfare is every man's concern? And, if this be admitted, one does not need to be a "socialist," in the sectarian sense of the term, to perceive that, in the ultimate perfected development of society, the body-social *will* assume responsibility for the welfare of its members, at least so far as those interests are concerned which are the inalienable and common rights of every citizen of a civilized community. Nor does it require any great keenness of vision to discern the pointing signs of the times, that we are rapidly moving toward this very goal.

One of these communistic interests involved in this forward movement is health. And it is as certain as the logic of events can make it that medicine—in which I include every agency for the preservation and protection and restoration of health—is fast on the way to being socialized. This is the *Zeitgeist* as it applies to medicine.

Already the outposts of medicine are in the hands of the State. Already a hundred agencies of a public and semipublic nature are in operation for the prevention and the cure of disease. And, surest sign of all, society is at last fully awake to the *economic* importance and value of health as a public asset, and is evolving ways and means of safeguarding it as a matter of public investment. Witness the movement within the last few years among the life insurance companies in the conservation of health (at first confined to their own policy-holders, but later, and more wisely, seen to call for extension to the public at large) which recently has culminated in the organization of the Life Extension Institute.

There is, I think, no question but that the ultimate destiny of medicine is socialization. I do not say socialism, because that represents the pet formula of a clique of reformers, rather than the sweep of a universal trend. Medicine will, eventually, become a public, a social function.

I do not mean, nor do I believe, that society will ever do for the individual, in medicine or in anything else, that which he can and ought to do for himself. All attempts in that direction, however well meant, slop over the proper limits of socialization and will have to be corrected. I am only too well aware that society never can make a man individually and inherently healthy, just as it never can make him moral. But society can, and will, administer the office of public health, as already it administers the office of public morals.

Nor is the fulness of this time, in my opinion, very far distant. In the past few years, this movement has been gathering tremendous momentum, and, even at this very moment, is increasing that momentum at a prodigious rate of progression. Such movements have a habit of growing by a sort of geometrical progression, so that one day a single multiplication brings the whole denouement toppling down upon us.

It is useless to kick against the pricks or foolishly to blind our eyes to the future. It is another habit these processes have, that they march relentlessly over individual disapproval or opposition. The wise man—in this case the wise physician—is he who discerns the *Zeitgeist*, who takes the measure of his future in relation to it, and who prepares for the developments which inevitably are on the way.

Successful men never neglect the treatment of a patient's personality. It is always difficult to listen to the recital of an irrelevant family history and of details which are obviously unimportant. The details may be trivial, but it is a fundamental truth that you can not succeed in treatment unless you have the confidence of your patient, and this you certainly will not have unless you listen to the recital of his woes.—Sir John Collie.

ASTHMA BRONCHIALE VERSUS DYSPNEA OF OTHER ORIGIN

A physician of Basle (Switzerland), Carl Staeuble by name, makes a most sensible suggestion with regard to the differential terminology of asthma. The term asthma, he proposes, should be restricted exclusively to what is recognized as "true" asthma and now designated as "bronchial" and "nervous"—the latter distinction, however, becoming untenable in the light of modern research. All the other forms of spasmodic constriction of the bronchi, classified according to their various origins, it would be better to distinguish as, e. g., cardiac, hysterical, psychic, anemic, uremic *dyspnea*, and so on.

This seems an excellent idea, for, in this way, the simple term asthma at once would define that specific condition displaying all those classical features that make this malady so feared, and involving the idea of a congenital constitutional basis, as well as the presence of the tough mucous secretion with their Curschmann's spirals and Charcot-Leyden's crystals; besides the many other characteristic derangements of function. We heartily second Staeuble's recommendation, thus to confine the term asthma to this specific interference with breathing, as based upon what

sometimes is called the "eosinophile diathesis."

Somebody said man was made to mourn. He was not—he was made to work out his life and in the work get as much pleasure out of each twenty-four hours as he has capacity to digest. No matter what job you undertake, if you can't work up a new layer of enthusiasm each day on it, get out; you can't succeed if you can't enthuse.—Henry D. Wilson.

AGAIN THE HARRISON BILL

We hope that before this number of CLINICAL MEDICINE reaches you the Harrison antinarcotic bill—without the objectionable proposed amendments—will have been passed by the Senate and signed by President Wilson. But whether it is passed or not, there are several points on which we wish to make ourselves perfectly clear.

First: We are not fighting the druggists. We have not tried, neither shall we try, to lay one single legislative pebble in the path of any honorable knight of the mortar and pestle. If the Harrison bill or any other bill contains any provisions that are oppressive to the decent pharmacists—and these are overwhelmingly in the majority—we shall be glad to join with them in efforts toward modifying or removing those features.

Second: We are unalterably opposed to, and ever shall fight with all our strength, any legislation designed to oppress the medical profession. That is why we have come out flatfooted against the proposed Nelson amendments to the Harrison bill. These amendments were slipped in at the last moment, evidently with the hope that they would be passed unnoticed. As one of our most distinguished Chicago physicians has stated in a telegram to Senator Lewis, such amendments "are dangerous to the best interests of patients and people of the country and are an affront to the integrity of the American medical profession." Read the article on the bill printed in this journal last month (page 360), and you will understand why this statement is true.

Third: We hope to be able to present the plain unvarnished facts in this matter, clearly and forcibly, but without passion, and without descending to abuse of our opponents. We have refrained from publishing communications from several readers, who are justly indignant at the efforts to tie their hands, simply because these communications have been too strongly worded. We do not want to do anything to array doctors against druggists. Harmony between them is better for both professions.

Fourth: We are uncompromisingly in favor of the unamended Harrison antinarcotic bill and have repeatedly urged its passage. We supported it as passed by the House of Representatives, although it placed very decided burdens upon physicians—more than upon any other class affected by it; we supported it as finally reported by the Senate committee, which made it more acceptable to the medical profession. But amendments similar to those proposed by Senator Nelson are unwise and dangerous, and these amendments should be killed. We think this will be obvious to the Senator himself when he understands the situation fully.

One thing more. After we had prepared the article which appeared in CLINICAL MEDICINE last month, and while it was being printed, we received copies of some additional amendments very recently proposed by the Executive Committee of the National Drug Trade Conference. Most of these amendments were good. For instance, placing hypodermic syringes and needles under the operation of the law seems an absurdity when we consider that every syringe package of a serum or bacterin would be treated in enforcing the law like a narcotic! The Committee was justified in trying to wipe out this provision. As a matter of fact, with one exception, we have not the slightest objection to any of the Executive Committee amendments. That one we oppose, because it would make it compulsory for physicians to keep records of narcotic drugs which they might dispense, no matter what the form, combination, quantity or dosage. Said records, according to this proposed amendment, would have to be made "in a suitable book" and "be preserved for two years in such a way as to be readily accessible" to government officials.

We are very sorry to be compelled to disagree on a single point with the Executive Committee of the National Drug Trade Conference. This Committee consists of a group of able and conscientious men, who are trying very hard to work out an effective measure and bring into agreement a number of conflicting interests. These men have done good work, and we honor them. But, in assenting to this record-keeping provision, they made a grave mistake. It is exceedingly offensive to the medical profession, which sees in it only an effort to make difficulties for the physician—and with the prospect of more difficulties to follow if this amendment is accepted.

Our objections to this phase were given, in part, in our discussion of the Nelson amendments (which also included this feature) in last month's *CLINICAL MEDICINE*, page 360. We may discuss it more at length in a later issue.

We believe that, on further consideration, the Executive Committee of the Drug Trade Conference will recede from its request for the inclusion of this recording feature in the bill. We may be permitted to express this hope, in view of our sympathy with its work and our sincere respect for the men who constitute it.

Again we urge our readers to keep carefully in touch with all proposed legislation. The physician should position himself on the right side of every sound reformatory measure; but he should not permit any man or any group of men to use legislation of this character to impair his legitimate freedom of action and lessen his professional usefulness.

The difference between hurrah and hustle is the difference between the new broom and the vacuum cleaner. One makes an impression for a few days, but the other grinds along and gets clear down into the roots of things day after day. There is always a reaction after a hurrah. There is no slipping back after hustling because—like a commodity mentioned in the Sunday school books—it brings its own reward.—Joseph Blethen.

EMETINE AND BRONCHIAL HEMORRHAGE

The re-discovery of the remarkable power of ipecac in amebic maladies has aroused among French therapeutists new interest in this active principle of ipecacuanha-root; but, as yet our Gallic brethren do not seem to have apprehended the far-reaching influence of this therapeutic triumph—a triumph wholly resulting from the substitution of this particular alkaloid for the crude vegetable drug itself. As we know, ipecac has ranked with epsom salt and castor-oil as one of the most common of domestic remedies. To attribute new curative properties to it would be deemed no more credible than the assertion about such powers in table-salt or corn-meal! That this South American plant made its first reputation as a remedy for dysentery, had become merely a curious bit of ancient history, on a par, almost, with the use of spiders' web as a hemostatic.

A number of French clinicians have, with success, applied emetine hypodermatically in the treatment of hemoptysis. One such case, recorded in *Le Monde Médicale* (Feb. 5, 1914) by Chauffard, is the most remarkable we

have yet seen. This was a hemoptysis from ulceration of the pulmonary vessels, with bloody expectoration, continuous and of long standing, and hemorrhagic attacks so grave that during one of them the patient lost as much as two liters of blood within four hours. To overcome this very dangerous state of affairs, all the hemostatics in use had been employed, but without any result. Finally, emetine cleared up the expectoration very rapidly, after which the hemorrhagic attacks ceased.

Unfortunately, the writer does not have access just now to the original report, hence, cannot know whether atropine was employed or not. But this he can assert, that a full toxic dose of atropine will usually control hemorrhage.

This drug, it must be remembered, increases capillary attraction of the blood, impounding it in the peripheral arterioles, by withdrawing it from the bleeding orifices; and, consequently, it cannot escape from the lesions, because it is not there to escape. All that atropine requires is time to develop its full action in actively dilating the capillaries. Since the latter have, collectively, 700 times more capacity than the arterial system, it is easy to realize that a slight increase in their attraction for blood suffices to withdraw that fluid from the gaping orifices of the larger vessels.

Atropine is a great remedy for alarming hemorrhages—a therapeutic ligature. The influence of emetine is yet to be determined, but it would seem to be more enduring. There is no reason for believing that atropine has any more influence upon the causes of hemorrhage or their recurrence, than the application of a silk ligature would exert. However, the case quoted above seems to indicate that emetine does influence the vital processes favorably. At any rate, whatever its mode of action, it is a very efficient remedy in cases of hemoptysis. It controls the hemorrhage with a rapidity of action that is sometimes marvellous and certainly hard to understand. Read carefully the report of what our French confreres are doing with this remedy, given on page 247 of the March number of *CLINICAL MEDICINE*; also, Dr. Cope's story of how it saved the life of his son, after other things—atropine included—seemed to fail. (See April number, page 352.)

Emetine is a great drug. We have known it all the time—and others know it now. Of course, it will not replace atropine as a hemostatic; rather, the two remedies will be

used together, or each to meet its special indications.

There is need of careful observation here and the correlation of many such to form a comparative picture. Will our readers who try out these hemostatics please report their results?

THE TREATMENT OF MUCOUS COLITIS

One of the dailies recently published a letter from a man who had had a personal experience with mucous colitis. He lost forty pounds in weight in four years. Symptoms: obstinate constipation, steady dull pain in some part of the colon, and colics in various locations. The treatment that proved curative was as follows: A hearty mixed diet; rest after meals, with a hot-water-bag to the epigastrium; eating bran and agar; cottonseed-oil enemas, up to 6 ounces, at bed time; and, lastly, stopping worrying. He regained his forty pounds in six months. Bismuth and belladonna were the drugs used.

Commenting upon this, Dr. W. A. Evans, former health commissioner of Chicago, says: "Treatment [of mucous colitis] is most unsatisfactory." That is an admission Dr. Evans may make, but one to which we can not invariably subscribe. Much may be done for these cases.

It has always been a question whether mucous colitis is a cause or an effect of the nervous depression and the instability invariably presented with it. To us, it is a question easily solved: The mental depression connected with diseases seated below the diaphragm is proverbial; and successful treatment of the colonic malady soon demonstrated its causal relation by the emotional rebound ensuing. This is paralleled by the brilliant effect upon the mind of successful local treatment of spermatorrhea—or rather of the underlying prostatic irritability. The prompt disappearance of hypochondria in such persons is impressive.

In the case cited, the elements of curative treatment were these: (1) Stopping the worry. (2) Full diet allowing better nutrition. (3) Keeping the bowels clear and stopping autotoxemia and local toxemia. Keep the hepatic secretion active, remembering the value of the bile salts. (4) The influence of atropine in checking the discharge of colonic mucous. (5) The local use of oil, a soothing remedy that also lubricated the bowel and promoted the passage of feces. It is also

probable that by absorption of this oil some local feeding of the debilitated tissues was gained.

But the large bowel does not absorb? Briggle! All tissues absorb when brought in contact with food-materials they need.

Roland G. Curtin once called the writer's attention to the value of the silver salts in mucous colitis. Since then we have given the oxide in many cases, and always with benefit. One grain of silver oxide at bed time is a good dose; the danger of its being changed to the chloride, being less at this period, while the long fast-period gives the drug time in which to act, undisturbed by food. There is little peril of argyria before at least one dram of metallic silver has been consumed. Best give the silver for one week, then change to zinc sulphocarbolate, then to copper arsenite; then back again to the silver, and so alternately. The treatment must be chronic, like the disease itself.

Always and always, nourish. Use any and all easily digestible and nutritious foods. Aid digestion with papayotin—acids do not seem desirable. Maintain body-weight by any—and all—digestible fats. Keep the blood fresh with the aid of a pint of fresh fruit-juice daily. Give buttermilk made with the Bulgarian ferment. In cold weather, rub the body daily with hot codliver-oil. Be careful and sparing with tonics; they are not well borne in full doses or when long continued.

Benefit is assured if the treatment is intelligently devised, skilfully applied, and persistently followed out.

If our first duty is to give honestly of our knowledge, the second duty is to give fully.—Dr. R. C. Buist.

NEURASTHENIA IN THE AGED

This malady, difficult of management in any case, is especially troublesome as it occurs in a man past his sixtieth year. How much of the disability is inherent to age?

As age grows, the muscular force abates. The man "slows up." He has been slowing up for years, but, unless he was a baseball-player, he has not noticed it. His muscles respond to stimuli more slowly; the intervals of rest before repetition become longer; the motions themselves are more deliberate. Comes the time when a day's work is accomplished only by thoughtful management, the man making his brain save his hands, and especially his legs. For, while the victim of hemiplegia recovers the use of his leg long before he does that of his arm, the aging man

finds the muscular weakness of senility appear in the legs first. Hence, he seeks to aid them by the strength of his arms whenever possible.

But even at sixty-five it takes something more than years to develop typical neurasthenia. Chief among the causes is fecal retention. To relieve this, we should rely solely on minute doses of a peristalsis-incitor, and a daily enema of water—2 quarts with 1 ounce of sodium bicarbonate. Warm, body-heat at first, gradually cooling it down until as cold as may be pleasant. The internal cold bath has the same beneficial action as when applied to the external skin; in either case, that is, if proper reaction follows. In cold weather, the effect of lowering the body-heat must be considered.

No single remedy compares with the cold bath as an incitor of vitality. This writer, in his sixty-fifth year, has been accustomed to a morning cold plunge. For a month he had no opportunity to follow this habit, by reason of traveling. Symptoms of neurasthenia developed until he felt like a very old man. Six days ago he commenced a new method—standing in the tub and pouring over himself a bucket of cold water. The result has been remarkable: today he is alert, quick in thought and movement, longs for work, and has cast off the consciousness of age. Reaction is immediate and rough toweling quickly develops a glow. But for the anemic, poorly nourished and weak this treatment would be too vigorous—too severe.

Open-air exercise: Always stop short of fatigue. Walk half a mile, swinging the arms and expanding the lungs, then stop. Do you feel tired? Certainly; and that is just when to stop. In an hour, repeat the walk, or the sawing of wood. And so every hour that you feel like it; but never when you feel more like sitting down. All the open-air exercise you can get, while never once becoming fatigued.

As to the food. Easily digested, nutritious articles, in quantities you can digest. Sour meats, pigs-feet, raw beef, oysters or eggs, milk, always warm, malted milk, nuts, a little of every food placed before you, the quickly digested breakfast foods, a pint of fresh fruit-juice every day; hot drinks with meals, preferably cereal, like oatmeal-gruel. Food every four hours, rarely more than a pint. Long chewing. An hour's rest after each meal, chewing some gum to develop salivary action; a hot-water-bag to the epigastrium, to favor digestion. No caffeine-beverages nor alcohol. Digestants like papayotin if needed—usually they are, and they do no harm.

Also, take six of the Bulgarian bacilli tablets every day. In two weeks you will have established a colony of this lactic-acid germ in your bowels; and thereafter two tablets at bedtime will keep up the force.

Now you see why I object to saline laxatives in these cases, for they inhibit the action of the Bulgarian bacillus. Sweep out the bowel with salts, and it will take two weeks to re-establish the colony. Besides, it is as great a mistake to hurry the progress of food along the small bowel, as it is to let it lie in the colon. Let absorptive reaction extract every particle of nutriment from the chyle before it passes the ileocecal valve. Turck found that when he washed out the stomach four hours after meals very little of food-elements came away, but the patient manifested unmistakable signs of denutrition.

Then—take your time. Rome was not built in a day. The vital processes are slower in advancing years. Reconstruction and rebuilding vitality are tedious processes. Look for many a backset—the man will persist in tiring himself in pushing his exercise, in neglecting the rather elaborate régime that is absolutely requisite. Officious friends urge him to eat more, to take "tonics" or "a little wine for the stomach's sake," or to try some other doctor who offers more than you can honestly promise.

Success follows when the plan of action is judiciously laid, fully explained and comprehended, and faithfully and intelligently and patiently and persistently carried out.

DOCTOR COOPER'S BOOKS

Several physicians have written us, inquiring as to the possibility of procuring copies of the books written by the late Dr. William Colby Cooper. We have learned that his widow, Mrs. Cooper (living at Cleves, Ohio), has a limited number of copies, which she will be glad to dispose of to anyone desiring them; the regular published price of these books being as follows: "Immortality," \$1.00; "Tethered Truants," \$1.00; "Preventive Medicine," \$1.00; "Primitive Fundamentals," 50 cents; "Matter and Mind," and "The Gospel of Philosophy," both together, 50 cents.

We urge every reader of CLINICAL MEDICINE who knew and loved Doctor Cooper through his writings—and every one who knew him did love him—to procure from Mrs. Cooper copies of these books. In so doing, you not only will serve yourselves, but be of service to the dear Doctor's wife.

Leading Articles

Bacterin Therapy in Everyday Practice

By W. C. WOLVERTON, M. D., Linton, North Dakota

EDITORIAL NOTE.—Doctor Wolverton has promised to write us several papers upon bacterin therapy and its application in the work of the general practitioner. This is the first of his series. He writes, not as a laboratory specialist, but as a man very busily engaged in a large country practice. The problems he has to meet are the same with which the majority of our readers have to deal; for this reason we believe that his papers will be peculiarly appreciated and prove exceptionally helpful.

FROM conversations with a large number of physicians with whom I am personally acquainted, as well as from reading many papers written by otherwise well-informed men, it seems to me that there exists much misapprehension concerning the bacterial vaccines, and an unwarranted fear of possible deleterious action from their therapeutic exhibition.

The subjects of infection and immunity admittedly are complicated, perhaps made more so by a multiplicity of such terms as, for example, "agglutinins," "bacteriolysins," "opsonins," "precipitins," "alexins," "endotoxins," so that it is no cause for wonder that the man who was graduated before modern bacteriology was made a part of the medical curriculum is dismayed at the complexity of the subject and dismisses the use of the bacterial vaccines with the remark about the futility of teaching an old dog new tricks.

In the same way, many men hesitated about beginning the use of the active principles of drugs after having had many years of experience with the galenical preparations; but, once they made the start, they never turned back. And so with the bacterial vaccines; once let a man employ these products intelligently, and he finds that he has added a set of keen new weapons to his therapeutic armamentarium.

I have been making almost daily use of the bacterial vaccines, in a large general practice, for considerably more than three years, and can truthfully say that, when I administered them in accordance with therapeutic indications and in conjunction with the proper active principles of drugs, the vaccines have seldom failed to give splendid results.

It is because of this thorough tryout of the vaccines, in a large *general practice*, and because I do not regard the vaccines as a "cure-all" (but, rather, as a therapeutic adjunct of great value when properly employed, as stated, in conjunction with active medicinal agents), that I have been requested to write a series of papers, of which this is the first, dealing with various phases of vaccine therapy as it appeals to the general practitioner. And, naturally, the general practitioners make up the great bulk of the profession. So, I shall endeavor to present the subject in as simple and practical a form and as free from technical terms as possible.

Some Definitions

Now, to begin with, the bacterial vaccines, so-called, are not properly vaccines at all. Vaccines proper are living pathogenic micro-organisms, whose virulence has been attenuated in some one of various ways. Probably the best example of a *true vaccine* is seen in antismallpox vaccine. Then there is the notorious tubercle vaccine, which was known as Friedmann's serum, but which evidently is a *true vaccine*; for, it is said to consist of a suspension of living tubercle bacilli whose virulence for man has been attenuated by being inoculated into a turtle. Another *true vaccine* is that used in producing an active immunity against the disease known in veterinary practice as blackleg.

The bacterial vaccines are suspensions of *killed* pathogenic bacteria in sterile physiologic salt solution, to which usually is added a small percentage of trikresol or phenol as a preservative, in order to prevent contamination from without the container. A *better name than vaccines* for these preparations is

bacterins, and this term will be adhered to in these papers.

A serum (in immunology) is the blood-serum of an animal whose resistance against a given variety of pathogenic microorganism has been raised to as high a pitch as possible by inoculation either of dead or of living bacteria of the given variety or by introduction of their toxins. These sera are commonly spoken of as antitoxins.

Immunity and Immunizing Agents

One cannot reasonably take up the study of vaccine therapy or of bacterin therapy without saying at least a few words on the subject of immunity—by which latter term we mean the specific resistance of an organism against invasion by specific pathogenic bacteria.

Now, immunity may be either active or passive. *Active immunity* may be brought about in two ways; namely: (a) By the introduction into the animal organism of living pathogenic bacteria of a proper degree of virulence and in sufficient numbers to produce an acute infection. Following recovery from this infection (if the patient survive), there usually exists an immunity against a second attack of the same disease, said immunity persisting for a variable period of time. (b) By inoculation with *killed* pathogenic bacteria (bacterins, bacterial vaccines). The latter method certainly is by far the more desirable, since no disease is produced.

Passive immunity is of short duration and is brought about (in so far as it concerns the subject with which we are now dealing) by the injection (subcutaneous, intramuscular, intravenous, subdural, and so on) of immune sera (serums) obtained from immunized lower animals.

In short, we inject into a patient *bacterins*, in order to create an *active* immunity; and *serums*, to produce a *passive* immunity. The former are used when we can afford to wait anywhere from a few hours to several days for their specific action (as in the treatment of all chronic and in many acute infections); the latter are employed where quick action is imperative (as in diphtheria, tetanus, and cerebrospinal meningitis).

We should be careful how we make use of the term serum, on the one hand, and that of bacterin, or vaccine, on the other. I have tried to make clear the difference between the two; and certainly the difference is sufficiently great. And, yet, I have often heard medical men, otherwise well informed,

speaking in county medical-society meetings about the use of typhoid serum when they meant typhoid bacterin. Typhoid serum practically never has been used in this country, and but little so in Europe. If a man does not know the difference between a bacterin and a serum, can he reasonably be expected to obtain satisfactory results from either of them?

It would, indeed, be a queer paper dealing with the topic of bacterin therapy in which no reference was made to the epoch-making investigations of Sir Almroth Wright. He it was who, building upon the firm foundation laid down by Metchnikoff along the line of the phagocytic function of the leukocytes (white blood-corpuscles), became the pioneer in the entirely new field of bacterin therapy. To those who wish to enter the study of this subject exhaustively, there can be no more interesting work than Wright's "Studies on Immunization."

In the beginning, Sir Almroth Wright tried the inoculation of patients, suffering from lesions due to the pyogenic cocci, with killed cultures of the causative bacteria, the cultures being obtained from the patient himself. Such a "vaccine" is said to be of the "auto-genous" variety, in contradistinction to a "stock vaccine," which is prepared from strains of bacteria obtained from patients other than those to whom the "vaccine" is to be administered. These early cases of Wright's consisted of furunculosis, sycosis, and acne (staphylococcus infections). One can well imagine the feelings of the great immunisator when case after case of these stubborn infections yielded like magic to the new therapy.

The Work of Almroth Wright

The first case reported by Wright was that of a man of 40 years, who suffered from furunculosis, complicated by sycosis and eczema of the face; these troubles being of seven years' duration. The man came under Wright's care in September, 1900; so, bacterin therapy is not so "new" as many seem to think. The patient just referred to recovered in about a month under his treatment.

I know of a similar case of sycosis, of over three years' duration; this man having spent in the neighborhood of \$300 in trying to rid himself of the trouble. Acting upon my advice, a brother physician administered three doses of a mixed staphylococcus stock bacterin at one-week intervals, and at the end of a month all signs of the disease had

disappeared, and a permanent cure resulted. My confrère afterward told me that the patient cheerfully paid him \$50 for having effected the cure.

Following his experiments with staphylococcus bacterins, Wright began to treat with a "coli vaccine" those infections of the genitourinary tract, the predominant micro-organism of which was the colon bacillus. It is in the paper in which he reported his results along this line (May, 1903), that he made his prophetic statement: "The physician of the future will, I foresee, take upon himself the role of an immunisator." Then followed reports upon the bacterin treatment of colitis and cholecystitis, infections of the meninges, the respiratory tract, middle-ear, and joint cavities.

Wright it was who revolutionized modern warfare by introducing, during the Boer war, prophylactic inoculations against typhoid fever, that scourge, until very recently, of military camps of all times. Now anti-typhoid vaccination is compulsory in our own army, as also in the armies of Great Britain, Germany, and other countries; and as a result typhoid fever virtually is a thing unknown in those armies.

In a paper published by Wright in 1904, he puts the problem cogently and succinctly thus:

"I will ask you to note, on the very threshold, that the method of immunization is nature's method. No one recovers from an acute or a chronic bacterial disease unless it be by the production of protective substances in his organism; no one acquires protection against a disease except, again, by the production of protective substances; and, finally, no one lives in the presence of infection and repels that infection, except by the aid of the protective substances of his blood. It is of the utmost importance that it should come home to you that we are dealing here, not with mere speculation; but with a generalization which rests upon a large body of veritable fact." [This was as far back as in 1904. The work of numerous other workers in bacterial therapy since that time has lent great additional weight to Wright's statements.—W. C. W.]

"Protective substances," he goes on to say, "may be defined as substances which enter into destructive chemical combination with bacteria; or, as the case may be, with other foreign elements introduced into the organism, either directly into the blood stream or by hypodermic injection." Wright then defines a vaccine as "any chemical substance which,

when introduced into the organism, causes there an elaboration of protective substances; or, more precisely, in technical language, it (a vaccine) is a substance which induces in the organism an elaboration of bacteriotropic elements."

Obstacles Hindering the Adoption of Bacterin Therapy

One of the greatest, if not the greatest, hindrances to the general adoption of bacterin therapy by the rank and file of general practitioners, is the belief that the dosage of the bacterins must be gauged by what is known as the patient's opsonic index.

In his early work, Wright and his coworkers preceded and followed each inoculation by a determination of the opsonic index, which, by the way, is an exceedingly complex and difficult piece of laboratory technic; and which, even in the hands of expert workers, is prone to give widely varying results. Furthermore, it has been proven by a great mass of clinical experience that much better results are attained when the size and frequency of dosage are based upon the clinical symptoms rather than upon the opsonic index. Consequently, we will not here enter into the technic of opsonic determination. Besides, it has been demonstrated that opsonin is only one of a number of protective substances entering into the production of immunity.

Another deterrent influence upon the general adoption of bacterin therapy has been the bogey of the negative phase.

When a *therapeutic* dose of an indicated bacterin is injected subcutaneously, there ensues a more or less brief period during which the specific resistance of the patient against the invading bacteria is temporarily slightly lowered; this is what is meant by the term negative phase. Following this brief negative phase, there should follow a rise in the patient's powers of resistance and a greatly augmented production of protective substances (also known as antibodies) in his blood stream.

If, on the contrary, too large a dose is given or if a second dose be administered before the positive phase be well established, then a prolonged and harmful *negative* phase may ensue. During a period of over three years, in which time I have personally administered close to 2000 doses of the various bacterins, I have seen very few clinical evidences of the negative phase; and in no case have I noted any harmful results from the use of the bacterins.

Prof. Timothy Leary, of Boston, writes as follows in *The Boston Medical and Surgical Journal* for October, 1910:

Efficiency and Harmlessness of Bacterins

"The general harmlessness of vaccines is indicated by two cases of infection in which, through error, 10 Cc. of staphylococcus pyogenes aureus vaccine, containing 10 billion organisms, were injected at one time as an initial dose. In one case, no untoward symptoms appeared. In the second, there was a temporary collapse, with prompt response to heat and stimulation. There are few powerful drugs in the pharmacopeia which could be used with such disregard for dosage, without serious results.

"The most serious objection to the use of vaccines in general infections is that the patient is undergoing extreme intoxication. I have called attention to the fact that physiologic doses of vaccine are not followed by a toxic (negative) phase. The dose of vaccine used in pneumonia, for example, contains fewer organisms than will be found in a few out of the myriads of infected air-sacs of the lung in this disease. The dosage is so infinitesimal and its toxic effect is so slight, if any, that it is not measurable.

"As evidence that even much larger doses are at least harmless, I might cite the case of a child of seven years undergoing an infection with pneumonia, with a temperature of 103 degrees and extreme meningeal symptoms, into whose body were injected, as an initial dose, 1,600,000,000 pneumococci. The standard dose for adults is 8 minims, or 100,000,000 pneumococci. This child, receiving 16 times the adult dose of vaccine, not only did not show harmful results, but began to mend shortly following the initial injection, and recovered under daily injections of several times the usual adult dose.

"A second child with pneumococcus meningitis showed prompt diminution [of the pneumococci—W. C. W.] in the cerebrospinal fluid and sharp amelioration of symptoms, accompanying the use of 4 to 8 times the adult dose of pneumococcus vaccine."

Drs. J. B. Deaver, J. C. DaCosta, and D. B. Pfeiffer make this statement: "As a contraindication to vaccine treatment conducted in this manner, we can only mention one, namely, overwhelming sepsis. It is not rational to expect help in such a condition, and from the nature of the case it is possible to do harm by adding more toxin, though we have not seen an instance of this clinically."

Dr. W. R. Allen, London ("Vaccine

Therapy," 3rd edition, p. 117), in referring to the treatment of pneumonia with vaccines, says, among other things: "A weak, irregular, very rapid pulse, enfeebled constitution, low muttering delirium, dry, furred tongue, and sordes about the mouth are, of course, unfavorable signs; yet, so marked has been the improvement, even after one injection, in two cases of this type, that no case is to be looked upon as hopeless."

Dr. John H. Mudgett (*Medical Council*, Jan., 1912, p. 7), writes: "Finally, I desire again to emphasize the ease and facility with which bacterial vaccines may be used by the general practitioner; and also I wish to state that the use of bacterial vaccines is as safe as the employment of any of the potent drugs of the materia medica. They should be used by every practitioner of medicine as an accessory to his other methods of treatment."

Dr. J. G. Callison, discussing typhoid fever (*The Post-Graduate*, July, 1911), declares: "When given in therapeutic doses, such stock vaccines are without injurious effect and do not interfere with other treatment."

Dr. R. H. Dennet (*The Post-Graduate*, July, 1911), in referring to a case of typhoid fever, says: "The case was a very desperate one, but after the use of the vaccine went on to a complete recovery. The large dose this patient received certainly did no harm."

Dr. James M. Phalen (*Journal of the American Medical Association*, Jan. 6, 1912, p. 11), after reviewing the literature on the subject of typhoid-fever treatment with vaccines, writes: "All agree, however, that even in cases in which it causes no improvement it has done no harm."

Some Misconceptions—Terms Explained

Another thing which has hindered the general use of the bacterins is the idea held by many physicians that only autogenous bacterins, other than those prepared from extraneous sources, are of any value.

As already explained, an *autogenous* bacterin is one prepared from bacteria obtained from the patient's own lesions. A *stock* bacterin is one prepared from bacteria obtained from the lesions of some other patient or patients. A *polyvalent* bacterin is one prepared from several strains of the same variety or varieties of bacteria. Most stock bacterins are, and all should be, polyvalent.

It has been argued by some ultrascientific men that the immunizing mechanism of a given patient is more apt to respond to a

bacterin prepared from the special strain of microorganism producing said patient's infection, than if the bacterin were of the stock variety, i. e., prepared from extraneous sources. In actual practice, however, many times autogenous bacterins have failed signally; while, when a polyvalent stock bacterin has been substituted, the response has been as brilliant as it was prompt. The reason for this probably is that the patient's immunizing mechanism had become, as it were, habituated to the constant autoinoculations of the particular strain of microorganism causing the infection, until it (the immunizing mechanism) no longer responded. But when a variety of different strains of the given microorganism to which the immunizing mechanism was not accustomed was introduced, a marked response resulted.

Be that as it may, stock bacterins meet almost all the requirements of the general practitioner in his daily work, and it is only rarely that he will find it necessary to have an autogenous bacterin prepared. I myself have a complete equipment for the preparation of autogenous bacterins and have prepared a few of them; but, in acute infections, the need for prompt treatment is so urgent that the patient might well succumb to his disease while waiting for the preparation of an autogenous bacterin.

Stock bacterins are easily procurable, at very reasonable prices; autogenous bacterins cause great delay in instituting treatment, and are very expensive.

After an unusually extensive experience both with autogenous and stock bacterins, Polak and Van Cott, of the Long Island College Hospital, have said that, in their opinion, fully as good, if not better, results were obtained, in the majority of cases, from a reliably made stock bacterin of polyvalent strain than from autogenous bacterins. My

own experience has brought me to the same conclusion.

Mode of Administration

It is my personal belief that bacterins should be administered *subcutaneously*, rather than intramuscularly, for the reason that it is believed that the antibodies or protective substances elaborated in response to the injection of a dose of bacterin are formed principally by the connective-tissue cells, in the immediate vicinity of the site of injection. Following this theory, wherever feasible, it has been my custom to inject the bacteria at some point *distal* to the seat of the infection.

This is in accord with the dictum of Wright, who asserts that the antibodies are formed at the site of inoculation, and can then travel "upstream," along the lymph-channels leading to the seat of trouble. When this is impracticable, a good site for inoculation is just over the insertion of the deltoid muscle. In the case of children, I prefer the gluteal region as the site for injection of the bacterin, for the reason that the child cannot so well see what is being done; also, there is a great deal of loose subcutaneous tissue in this location, and the skin is not so well provided with sensory nerves here as in some other localities.

As to the matter of dosage, that will be taken up as individual infections are being considered in papers that will follow.

In closing, I wish to emphasize the fact, as I have said at the beginning of this paper, that bacterin therapy is not a cure-all, and that it is not intended to replace or displace entirely the older and time-tried medicinal remedial agents; but, rather, that drug therapy and bacterin therapy should go hand in hand, insuring better therapeutic results than would be accomplished from either alone.

(To be continued)



The Advance of Serum Therapy

By ARTHUR M. SLEE, Swiftwater, Pennsylvania

Assistant Director and Immunologist, The Slee Laboratories

EDITORIAL NOTE.—In this article Mr. Snee gives an interesting review of the present status of serum therapy, and explains some of the problems that confront the student of this new branch of therapeutics.

TWENTY-TWO years ago Behring and Kitasato succeeded in their endeavor to immunize horses against diphtheria and tetanus. Serum therapy was then in its infancy, for these men had but begun that chapter in the history of medicine and laid the foundation for a new list of therapeutic agents. Really, that chapter was begun by Jenner, the English physician whose discovery of vaccination against variola placed him one hundred years in advance of his time.

However, the use of smallpox vaccine, although closely allied, is not classed under the head of serum therapy; so, with this brief mention, let us leave the worthy Jenner and jump the long interval of years to 1883 and 1884, when Klebs and Loeffler isolated the bacillus of diphtheria and demonstrated its constant occurrence in the throats of diphtheria-patients. The following year Nicolaier produced tetanus in animals by inoculating them with garden earth. A little later, in 1892, Behring and Kitasato concluded their experiments, mentioned above, upon the immunization of horses with the respective toxins of the diphtheria and tetanus bacilli, and discovered the curative and preventive value of the serum of horses thus immunized. At first, the use of this serum was not practicable, because of the large volume required to obtain a sufficient number of antitoxic units; however, further experiments showed that some horses could be brought to yield a higher percentage of antitoxin than others.

A great many different methods of immunization have been tried in the last twenty years, but an absolutely infallible means has not yet been discovered, and the fact remains that some few horses will produce as high as 800 or 1000 antitoxic units to the cubic centimeter of serum, while others, in apparently as perfect physical condition and subjected to absolutely the same procedure, never yield more than 100 units to the Cc. The reason for this marked variance in yield among horses has not yet been discovered, and no man can predict whether a horse will produce high-grade antitoxin or not, until that horse has been at least one month under treatment.

Another difficulty which arose to confront those who advocated the use of horse-serum

was the fact that these serums in some persons gave rise to very alarming reactions, occasionally even ending in death.

It had long been known that horse-serum had an irritating effect upon guinea-pigs. If one dose of serum were followed in ten days or more by a second dose, the cavy would, in a very short time, show marked respiratory embarrassment and die within ten or fifteen minutes, apparently from asphyxiation. This annoying phenomenon was studied by Theobald Smith, Andersen, and others, and the name *anaphylaxis* was applied to it. But, inasmuch as normal horse-serum was known to produce this undesirable effect, obviously the antitoxic bodies in the serum of immunized horses were not the cause of it. Then, it was asked, why not eliminate all but the antitoxic part from the antidiphtheritic and antitetanic serum?

This elimination was attempted by Atkinson, of the research laboratories of the New York Department of Health. Atkinson did effect a partial separation of the antitoxin from the bulk of the serum, but the action of the product differed so slightly from that of the crude serum that it did not seem worth while going to the trouble and expense of adopting this method of refining as part of the routine in serum production.

The desire for a purer antitoxin had, however, taken root, and in 1905 Gibson, working in the same laboratory, carried the work started by Atkinson still further and obtained a more complete separation of the antitoxic globulin from the serum. Later, this method of concentration was greatly improved by Banzhaf, also of the research-laboratories named.

Banzhaf's method of refining and concentrating is recognized today as the most efficient means of removing the irritating constituents of the horse-serum, and it now is employed in many laboratories throughout the United States and Europe, refined antitoxin having practically displaced the crude serum. Not only has it almost completely eliminated the possibilities of anaphylaxis, rashes, and other undesirable after-effects—grouped under the name of serum-sickness—but it greatly reduces the volume of serum,

permitting a larger number of units to be administered in an infinitely smaller dose and with a minimum of inconvenience to the patient.

Standardizing Antitoxin

Ehrlich first pointed out the necessity of adopting a standard antitoxic unit by which all antitoxin should be tested. The antitoxic unit of diphtheria eventually agreed upon is that amount which will counteract 100 fatal doses of toxin for a guinea-pig weighing 250 Grams.

In the United States, each laboratory keeps a supply of test-toxin. A specified amount of this toxin is known as the L+ dose, or that amount which when mixed with 1 unit of antitoxin will kill a 250-Gram guinea-pig in three days.

Each month the United States Public Health Service Laboratories send out antitoxin a specified amount of which contains 1 antitoxic unit. The various laboratories then test their own standard antitoxin against this governmental standard unit. In this way a uniform standard is obtained. A similar method has been adopted for standardizing tetanus antitoxin; there being, however, certain technical differences.

As every physician knows, or should know, diphtheria and tetanus antitoxin are both of curative and of preventive value. All persons who have been exposed to infection from diphtheria should receive immunizing doses of 1000 antitoxic units. Of late, the practice of giving a large initial dose in diphtheria cases is coming into favor, in place of the older method of giving small consecutive doses. The highly concentrated antitoxin now obtainable makes this possible; 25,000, 50,000 or even more units not infrequently being injected at a time. Still it is wise to divide such large doses, injecting fractionally in several places.

Antitoxins Other Than For Diphtheria

In the case of tetanus antitoxin, it is of paramount importance that it be administered promptly. Owing to the peculiar action of the tetanus toxin, the curative effect of the antitoxin is not as great as that for diphtheria. However, if given before tetanic symptoms become visible, it will, in the majority of instances, save the life of the patient.

The practice of injecting tetanus antitoxin in all cases of suspicious wounds is highly commendable. Do not let me convey the idea, however, that its curative value is unworthy of consideration, for in many instances

it has been used in advanced cases of tetanus, with extremely good results.

Within a few years, Flexner and Jobling have prepared a serum for meningitis. This is produced by injecting a horse, first with killed meningococci, these, after a time, giving place to the live bacteria and, eventually, to an autolysate. This serum contains opsonins and agglutinins, as well as immune bodies specific for the meningococcus. To administer this serum, a quantity of the cerebrospinal fluid is drawn off by means of lumbar puncture, and a similar amount of the serum is injected into the canal.

Unfortunately, this rather delicate operation requires considerable practice and surgical skill. Not only must great care be exercised in introducing the needle into the spinal canal, but also it is essential that the amount of serum injected be almost identical with the amount of fluid drawn off. This antimeningitis serum has been found of considerable therapeutic value, having greatly reduced the mortality from meningitis.

In a similar manner as for the foregoing, specific serums are being prepared for gonococci, staphylococci, streptococci, pneumococci, and like infective germs, all of which have been found serviceable.

So far no method of standardizing these latter sera, with regard to their specific antibodies, has been found, although their opsonic value may be determined; neither has any satisfactory refining process been worked out. Since not only the specific antibodies but also the opsonins and the agglutinins are required to produce the desired effects, the refining of these sera presents a more difficult problem than that for diphtheria and tetanus.

It might be said that these remedies are, at the present day, passing through the stages through which the diphtheria and tetanus antitoxins passed some ten years ago. Although we still have much to learn regarding them, at least we know their value and can use them intelligently.

In addition to the sera already mentioned, a specific antitoxin is being made for snake poisoning, which has been used with very gratifying results and is in some demand in snake-infested countries. Also a pollen-serum, used in the treatment of hay-fever, has been found effective in some instances.

Normal Serum in Hemorrhages

I might mention here the use of the normal horse-serum in stopping hemorrhages. It has been found that, in the case of persons whose blood does not possess sufficient fibrin,

if they be injected with a small quantity of this serum before operating upon them, their blood will clot much more readily; in that way preventing possible serious hemorrhage. The serum is given subcutaneously, orally or is simply poured into the wound.

When we come to sum up our present successful serums, we find that they may be counted upon the fingers of the two hands. If serum therapy was in its infancy twenty-two years ago, it can but be said of it now that it is a sturdy and promising child today. There is a great field for research and experiment before us, for the chapter by no means is ended; and many intelligent and hard-working men are constantly being drawn

toward it. New discoveries are continually being brought to our notice, which tend to lead us nearer to the light.

Slight as our knowledge seems, when we consider that half a century ago the theory that bacteria were instrumental in the generation of disease was regarded by a large part of the scientific world as an absurdity, one begins to wonder that this knowledge of it today is not even more limited. In short, I am of the opinion that the men who have built up these new sciences—bacteriology and its offspring orrholology (serology)—may well be congratulated upon the tremendous strides they have made toward the betterment of our race.

The Diagnosis and Treatment of Dementia Praecox

The Application of Nuclein to Its Arrest

By BAYARD HOLMES, B. S., M. D., Chicago, Illinois

DEMENTIA praecox, or the insanity of adolescence, occupies a unique place in medical practice and medical literature. It is not mentioned in Osler's "Modern Medicine," nor in his textbook, of which 100,000 copies have been sold! Fifteen thousand youths afflicted with this "disease," however, are committed to the madhouses of the United States each year, and they are pronounced incurable from the start. The management of these madhouses in Illinois (for example) is in the hands of five politicians, only one of whom is required by law to have any medical training or any knowledge of the problems of insanity.

No layman, and but few physicians, will believe me or anyone else when, in utmost seriousness and humiliation, we assert that *no effort is made* by any member of the Board of Administration in Illinois or by any of the faculties of the ten institutions under their direction to study the conditions of these unfortunate youths. The eight superintendents, who are political appointees, are full of "business," feeding, housing, and attending the many social needs of their irresponsible and helpless wards. The medical care of these unfortunates is intrusted to young physicians who have had little or no experience, and who get out of the service as soon as they can, if they are good for anything, because they cannot endure the unprofessional conditions of their environment.

When a youth suffering from dementia praecox is committed to one of these institutions he is locked into the ward, where he becomes noisy and boisterous or sullen and silent. In the former case, he is likely to be "beaten up" by the "nurse attendants" until thoroughly cowed and humbled. The attendants are omnipotent and remain in the institutions through all changes of administration. If catatonic, the patient curls up in bed and starves. The death rate during the first year is high. At the end of this year there is apt to occur a change—an adaptation. The emaciated patient—with swollen tongue, jaws protruding like an ape's, teeth rotting from neglect, hands, feet, legs, arms deformed from catatonia, abdomen and cheeks retracted from starvation—begins to wake up and become active or, on the other hand, he sinks to lower depths. During the first year of confinement to bed the patient is filthy half the time, lying in a bed wet in his own urine and befouled with his own offal—a picture of neglected misery that cannot be described, and that cries to civilization for correction or else euthanasia.

With this terrible picture, putting 300 great blots on the map of the United States where over 120,000 dementia-praecox patients are consigned to a pessimistic and nihilistic custody; with the boards of control of forty-eight sovereign states, expending for this custody of these wrecked citizens nearly \$50,000,-

000 annually, or four-tenths of the budget of the several states; with a suffering, but ignorant public, composed of the friends of the insane behind them and begging for betterment; with all these things, I say, they make no effort, spend no money and encourage no sacrifice for research for discovering the cause of this grave malady, or for finding some cure or way of prevention.

In Illinois, a research-institute was established by the Code of Charities (1907) but, with a legislative appropriation of over \$17,300, only two men are employed in its Psychopathic Institute.

How to Study Dementia Præcox

Fortunately, during the past year and a half, the application of the Abderhalden reaction to psychiatry has proved, beyond a possibility of discussion, that dementia præcox is a "disease," of which the mental symptoms and the deterioration are but incidents. Dementia præcox is not a perversity of conduct, a twisted idea or a curse of God. It is shown by this reaction that the pancreas and the genital glands are undergoing a degenerating process, as liver does in alcoholism and the thyroid gland does in exophthalmic goiter.

This terrible disease is slow in its onset, as a rule, and is characterized by a peculiar pupillary condition, a peculiar loss of weight, a peculiar perspiration, a peculiar arrest of growth of hair, a peculiar atrophy of the lower leg, and a peculiar condition of the blood. One may learn to recognize the disease by the two clinical methods: that of the asylum, where many cases can be studied in many stages of the disease, most of them in terminal conditions; and that of the physician, who sees one or two cases often in each succeeding stage of the disease. There is no doubt that each of these clinical methods has relatively some advantages over the other.

There are two more methods of studying the disease that ought to be utilized, but which are rarely employed. They each offer to the serious student employing either of the previous methods (the superficial study of many in a short time or the intensive study of a few over a long time) the greatest assistance in correcting misconceptions.

The laboratory method has been little used, and can be fully utilized only in the large general hospital, with a research-institute attached, like that at the Michael Reese with its Morris Institute or that at the Presbyterian with the Institute for In-

fectious Diseases, both of Chicago. There has been little laboratory study of dementia præcox. Even the condition of the blood has been only superficially observed, and hardly any coordinate studies of blood, metabolism, and conduct have been made. Therapeutic and laboratory investigation have not been undertaken.

The study of the literature of any medical subject is necessary to a full comprehension of all its intricacies. The literature of dementia præcox, under that name, is only twenty-five years old, but, now having the clinical entity well in mind, we can go back through the European literature of three hundred years and recognize the type; also even in the ancient Egyptian (in the Papyrus Ebers) for example, 1500 B. C., a clear picture of the disease is discovered. All four of the methods of studying the disease are necessary for its comprehension; namely: the prolonged and intensive study of one case, the superficial study of many cases, the laboratory study of one or many cases, and the reading of the world literature of the whole subject.

Dementia Præcox Characterized

From such a study as this, we conclude that dementia præcox is a condition appearing usually at the beginning of adolescence. It may make itself known at any later period. Its earliest manifestations are metabolic, and associated with various symptoms. In one case, it is simply nutritional; in another, skeletal; in still another, glandular. Various accidents and sicknesses precipitate the disease. The joints, the apophyses, the teeth, the tonsils, the intestinal functions are all and each apt to feel the intoxication. The use of the Abderhalden reaction in early cases has not as yet been reported, but one can readily guess that some remarkable disclosures in this direction are bound soon to appear.

The mind of the patient is apt to be greatly stimulated and the patient is prone to overdo in the beginning, but his vision and genius-like labor is followed by inactivity, depression, and apparent dementia. There are illusions, hallucinations, and delusions of mind, which result in errors of conduct; but dementia does not actually come on, and the patient, starving, mute, dirty, inactive, and fed with a tube, is perfectly conscious of his surroundings and remembers everything, has regrets and remorse, terror and fear, and suffers all the pain that rational persons do. These sub-

jects are also perfectly cognizant of ill treatment and kind treatment, but their delusions modify their conduct. They perceive, they conceive, but they cannot execute. In catatonia, they have muscular rigidity and in its early stage the condition is denominated negativism.

From a similar quadraguate study, we conclude that there is no etiology, pathology or treatment of this disease yet recognized. The prognosis is always bad. Recovery is unknown. The duration of the disease is unlimited. While many cases terminate early in death, the great majority live to acquire tuberculosis or other intercurrent or institutional diseases, and die—five, ten, twenty or more years after commitment. The disease rests at times and the patient becomes an uncomplaining drudge about the asylum, after earning a man's wages for the state.

Enter the Abderhalden Reaction

The first light is thrown upon this disease by the Abderhalden defensive-ferment reaction. This method, introduced by Fauser¹, of Stuttgart, in February, 1913, and continued by him and by a great army of biologic chemists and serologists in Europe, has shown that the genital glands are disturbed in every case of dementia præcox—the ovaries in females, the testicles in males. In catatonic cases, the thyroid gland also is disturbed. In every advanced, severe and terminal condition, brain-cortex also is involved. The later, and perhaps more happy, work of Fuchs and Fremd², shows that the pancreas is as early disturbed as the genital glands, perhaps even earlier. The patients afflicted with other insanities, especially manic depressive insanity, show none of these reactions.

Our study of the literature of this terrible disease, the etiology and pathology of which are unknown, shows little hope of successful treatment. Some do get well, especially after an attack of the infectious diseases, and now and then a recovery is reported; just as in the seventeenth, the eighteenth and the early part of the nineteenth centuries cases of successful laparotomies were reported. In Massachusetts, when one out of 1500 admitted were reported recovered during a seven-year period under examination, the medical officer making the report was severely criticized.

¹Fauser, A. D. m. W., Feb. 13, 1913, Vol. 39, p. 304-307.

²Fuchs & Fremd. M. m. W., Feb. 10, 1914. Vol. 61, p. 307-310.

Now it has happened that Bruce, Dide, Fischer, Halvar Lundvall, and Julius Donath have reported recoveries by the production of an artificial hyperleukocytosis, and this is the reason for writing this paper.

Has a Cure Been Discovered?

Lundvall made the most careful and extensive examination of the blood of the insane under his care, and developed the observation that there exists a polycythemia and leukopenia when the dementia præcox patient is failing, and a hyperleukocytosis and normal number of red corpuscles when the patient is improving.

In England and on the Continent, the nucleinate of sodium has been used to increase the leukocytes and produce improvement. One of the great objections to the use of this agent was the large quantity of water—50 to 100 Cc.—necessary, and the pain resulting from the injection of the large doses employed. Ittau, Fischer, and Donath have reported betterment, and even recoveries from its use. Julius Donath, in a recent essay, charges the psychiatrists with unwarranted pessimism toward dementia præcox, and reports actual recoveries after the use of sodium nucleinate.

Lundvall's Prescription

The most important and significant contribution to the treatment of dementia præcox comes from Halvar Lundvall, of Lund, Sweden. He uses a very concentrated solution, and has reported 18 cases, of whom 6 actually recovered, and all but 3 made remarkable and very desirable improvement. His report was obscurely published more than a year ago, and some improvements have been made in the preparation of the remedy at the "Apotheke Kjorten" in Lund. These improvements have been communicated to me by letter, and Mr. L. Breckwoldt of Sargent's drugstore (23 N. Wabash Ave., Chicago) has prepared the remedy according to the following formula:

Quassini depurati sicci	Gm. 2.0
Aquæ destillatæ	Cc. 50.0
Boil in a water-bath for one and a half hours, filter, and add	
Hetoli (i. e. sodii cinnamati) . . .	Gm. 1.0
Sodii nucleinati	Gm. 10.0
Acidi arsenosi (in solution) . . .	Gm. 0.005
Boil until all is dissolved, filter, and add	
Aquæ destillatæ bullientis, q. s.	
ut fiat	Cc. 50.0

This remedy should be kept in a dark, cool place. It does not need to be resterilized.

In anticipation of the use of this remedy, the patient's blood should be examined

and the leukopenia demonstrated and recorded; the bowels should be opened with calomel at night and a saline laxative in the morning, followed by an enema consisting of 4 quarts of hot water (105°F.), to which a tablespoon full of glucose (corn-syrup) has been added.

Then 1 or 2 cubic centimeters of the remedy is injected into the buttocks or other neutral place. In about six hours and after a slight chill, the temperature will be found to be 102° or 103° F., and the leukocytes will rise to 20,000 or even higher. The red corpuscles will go down nearly to normal, falling from 6,000,000 or higher to 5,000,000 or even to 4,500,000. There is usually an increase in urine. The reaction is stronger after the first and earlier injections, and later it is necessary to increase the dose even to 15 or 20 Cc.

The only guide as to the time for the next injection is the examination of the blood. The temperature stays up only a few days, but the leukocytes, in one of my cases, remained above 25,000 for five weeks. When the leukocytes fall below 12,000, then the dose should be repeated. When the reaction, as measured by the leukocytes, begins to weaken, the dose should be increased by 1 or 2 cubic centimeters.

Treat Like Tuberculosis

During all the time, the patient should be treated like a tuberculosis patient. Cold air, sunshine, and a good feeding—3000 to 5000 calories a day—are desirable. The daily bath and glucose enemas keep the patient clean and tidy. If the patient is mute and inactive, he must be taken to the toilet regularly, and great care must be taken with his teeth. Calomel and laxative salines often are necessary.

When it is possible, the patient should be exposed to the sunlight, cold air, and rain, just as Dr. A. Rollier, of Leysin, treats his patients suffering from surgical tuberculosis. ("Ergebnisse der Chirurgie und Orthopädie," Vol. 7, p. 1 to 146), and *Interstate Medical Journal*, March, 1914, Vol. 21, p. 279 to 284.

The uniform effect of these injections has been noticed by every one. There is a change. Every patient whom I have injected has gained weight, one as much as 20 pounds in six weeks. This is what might be expected, as the Abderhalden reaction shows a *dysfunktion* of the pancreas—and the pancreas is the lipase generator, the enzyme of fat metabolism.

It will be noticed that the hair grows more rapidly. If the forty-eight hour growth of the beard on a definite part of the face, cut before injections are used, is carefully laid on gummed paper or, better, measured with a micrometer, it will be found that, after the injections, the forty-eight-hour growth is at least half as long again. One mute catatonic, weighing less than 80 pounds, who had been fed with a nasal tube for three months, was led to the table a few days after the second injection and, with a little urging, fed himself. Interest in life increased in one young man, and he said he was "urged from within himself to eat and exercise and try to get well."

None of my patients treated with Lundvall's remedy have been examined by the Abderhalden method, but there was no doubt in any case of the diagnosis of dementia præcox. Every state institution ought to be able to make Abderhalden tests, and then this hopeful and promising remedy could be given an adequate and a conclusive trial.

If any reader of this article undertakes, from these directions, to treat one or more patients with Lundvall's remedy, either as prepared under his direction at Lund or by Mr. Breckwoldt at Sargent's drugstore in Chicago or by any expert pharmacist, I should be greatly obliged for a full, complete, and unabridged report.

Don't expect too much in a short time. Keep up the remedy with every possible improvement in the general hygienic conditions. As soon as interest can be aroused, cultivate it, but do not exhaust the patient. One young man, who had not written or spoken a word for four years, on several occasions, wrote his own name, after a little urging, after the sixth injection, and after a gain in tidiness and disposition that rendered his attendants grateful. His weight increased 10 pounds during the same time, he stood up straighter and walked better, going two or more miles twice a day.

Although I have used the remedy on only a few patients for six months, and every patient has improved, some have become more troublesome for the time. In an institution, the troublesome patient gets himself disliked.

It seems to me the remedy should be thoroughly tried, as it is painless and produces no abscesses. It is a thoroughly rational procedure. The patient's weight increases under its use. The inactive patients become active and thus cause more trouble, but they could hope to recover only by becoming more active.

The publicity given the method by *The Literary Digest* of March 7, has brought me a large correspondence and has aroused several centers of active therapeutics for this condition. I have in every case answered the letters and begged for reports of success or failure, and I shall hope to have a more

exact and comprehensive report in a few months.

The editors of this journal have undertaken to assist in furthering the treatment by supplying the remedy for experimental use when it can be administered under reasonable and favorable conditions.

My Experience with the Bacterins

By MALCOLM DEAN MILLER, M. D., Wollaston, Massachusetts

THE editor asking for articles on bacterins, to be written in the fewest possible words, I shall give a summary of my results, rather than reporting case-histories in full.

Gonorrhea

I began using the bacterins in gonorrhea about three years ago by treating all my chronic gleet and prostatic cases, and other long-standing Neisser-infections with the stock polyvalent gonococcus "vaccines" of different makers. I have used four different makes, with equally good results.

Looking back over my history cards for the last eight years and comparing results before and after employing the bacterin treatment, I find that all the later cases have been negative in examinations for the gonococcus in from one-half to one-third of the time required when no bacterins were used. I make a very careful microscopic study of all such cases, and during the last two years have found bacillus coli communis, a diplococcus resembling the pneumococcus, and both streptococcus and staphylococcus present so uniformly that now I seldom make use of a straight gonococcus bacterin, as I get quicker and better results from a mixed stock bacterin containing all these organisms.

In these chronic cases, inoculations are made every five to seven days, in much larger doses than commonly advocated. I seldom employ an initial dose of less than fifty million (50,000,000) gonococci, and, if the local reaction subsides within thirty-six hours, double that dose at the second sitting, and so on, increasing (unless the reaction is too severe and protracted beyond forty-eight hours) until doses of one billion (1,000,000,000) gonococci are tolerated. When this point is reached, examinations generally begin to get repeatedly negative; but, I continue the injections until the maximum dose no longer causes any more reaction than would

be set up by a syringe of water or a "squirt" of hyoscine, morphine and cactoid.

This attained, I consider the patient free from gonococci, although, of course, the accompanying catarrhal condition often requires further treatment with sounds, euarol, and other indicated measures. It is remarkable, however, how quickly the mucus in the urine diminishes under bacterin treatment, from the very first injection on.

For diagnostic purposes, I commonly employ a dose of five hundred million (500,000,000) gonococci, considering that a local reaction indicates infection; and conversely, no reaction, absence of living cocci. This test I consider useful in all suspected cases, because I have repeatedly confirmed a positive reaction by staining any available specimen by the Gram method.

Acute Gonorrhea the Best Field

Acute gonorrhea, however, seems to me to offer the best field for the use of bacterins. I have treated five male patients seen at the appearance of the "first drop," the initial doses being from 100 to 250 million gonococci. As soon as the local reaction had subsided, I doubled the initial dose, after which the symptoms almost entirely disappeared, no case going on to a profuse purulent discharge, or, in fact, there being experienced any more urinary scalding. After three or four doses, discharge being entirely absent, I have kept the patient under observation for several weeks and not terminated treatment until I obtained three successive negative tests, at weekly intervals.

The average duration of discharge has been about seven days. The injection intervals average about one every third day, and I feel sure that I get the best effect by using 250-, 500-, and 1000-million microbes. My old teacher at Harvard casts doubt upon my

results by saying that probably they were light cases; but I have never seen a case which cleared up in less than six or eight weeks under the irrigation-injection method.

The accessory treatment in this series has consisted of capsules of arhovin, by mouth, four times daily, and injections (after each urination if possible) of a weak solution of hegonon. This particular silver preparation is ideal for the dispensing physician, because it is not markedly hygroscopic, and, hence, it is very easy to weigh out 5 grains, dissolve it in 4 ounces of warm distilled water, and put it into an amber bottle, feeling confident that the patient has an absolutely fresh, active solution. The strength stated is near enough to that commonly advised, namely, 1-4 of 1 percent. It causes no discomfort. I tell patients they *must* retain the injection five minutes by the watch, even if they can find opportunity to do so only three or four times a day.

The only dietary restriction has been the exclusion of irritants, such as spices, for I believe there is too much starving of gonorrheics, and I prefer to furnish plenty of reparative material to aid the formation of antibodies.

Two cases of acute specific salpyngitis were similarly cleared up by means of three injections up to one billion gonococci, and gave negative results after the fourth injection, while examinations of vaginal and uterine swabbings also proved negative. Neither subject has since then had any symptoms or yielded a positive swabbing from the genital tract. Old cases, in which gonorrhea was suspected by the gentlemen involved, although assured by other physicians that they were "clean," have given me the characteristic reaction to a dose of 500 million, and have cleared up on bacterin treatment, supplemented by treatment with 10-percent silver-nitrate applications.

Pertussis

I have used Bordet's pertussis bacterin in several cases of whooping-cough, with brilliant results. One very severe case ran for over two months, with little amelioration, although held in check by means of strict alkaloidal medication. At that time, I could not get any bacterin, but later learned that a certain firm had brought one out, and ordered it at once. I gave half an ampule of 20 million, and within a few hours the spasmodic cough ceased entirely and remained absent for about thirty-six hours. I then gave a full ampule, with similar results, and the

third, which finished the cure, three days later.

Exactly similar results were obtained in the case of the mother of this child. In another family, all three children, aged 5 and 4 years, and 8 months, were infected. The two older ones cleared up in a very short time on calcium sulphide, nuclein, and calx iodata, without showing the characteristic whoop—in fact, the diagnosis was made on a history of probable exposure, and the spasmodic cough occurring at intervals. Neither patient received any bacterin, for I was not positive of the diagnosis, and they did so well on ordinary treatment that I did not feel justified in using it.

With the infant, however, it was far otherwise. Her attack was very severe, and I used bacterin as soon as the characteristic whoop appeared. This child, and one other, a delicate child of 2, required five injections, up to 50 million, before they were cured. I feel that in both instances earlier use of the bacterin, and doses repeated every second day, would have been better.

Cystitis

Mixed infections of the bladder in women occur quite commonly and often prove very resistant to treatment. Here, the ardor and frequency generally yield promptly to thorough irrigation with 2-percent boric-acid solution at 110 to 120° F., and one or two treatments with hot thymol-iodide oil solution; but the infection by no means is banished.

I have had some excellent results lately by using hegonon, 15 grains to the pint, and a bacterin containing the common staphylococci, streptococci, pneumococci, and colon bacilli. In one case, although no gonococci were present in the bladder, the husband gave a history of gonorrhea thirty years ago, and the wife showed abundant groups of Neisser's coccus in leukocytes in smears from the cervix uteri. This woman is now receiving the bacterin mentioned above, with a reinforcement of plain gonococcus bacterin, and she is improving very rapidly. The trouble is of thirty years' duration, having followed the use of the catheter in a twin pregnancy.

To Summarize

I believe that bacterins should be used in every case where the infecting organism or organisms can be identified.

I believe that stock bacterins, when rightly applied, always do good; and, even though

they may contain superfluous organisms, these can do no harm.

Failures when using the right bacterin are the result of timid dosage, at too long intervals. I aim always to get a decided local reaction, and generally double the dose at each sitting.

Failures may also occur because the bacterin does not contain one or more of the offending strains. In such a case, an autogenous bacterin should be prepared. I have had good results with autogenous bacterins in pyorrhea, though not reporting them here.

Dosage in chronic cases should be relatively larger than in the acute and the injections should be repeated at intervals of about a week. Frequent injections in acute cases.

Bacterins, applied under proper microscopic and cultural guidance, are more nearly specific than any other form of treatment known at the present time and offer the greatest hope for the future of non-drug medicine. Every general practitioner should keep on hand a stock of the most common single and mixed bacterins and learn to use them.

Bacterins: Their Field, Uses and Abuses

By ALEXANDER BARCLAY, Cloquet, Minnesota

FOR the past year I have been eagerly scanning the medical journals for an optimistic article concerning bacterin therapy. only to be disappointed month by month, week by week. At last I wrote to the editor of CLINICAL MEDICINE, complaining of this absence of such material, whereupon he kindly invited me to contribute a paper myself, so that I could have just what I wanted. I am sure this field can be covered in a much more masterly manner by some one more competent than I am; still, if a discussion can be started that will bring to light what heretofore has been kept hidden, the object of this paper will be realized.

Considering the possibilities, that the so recently developed bacterin treatment presents, such a dearth of literature concerning this form of therapy is surprising. It is almost impossible to pick up a journal that has not some reference to the blood-picture of one or more diseases; we are constantly hearing of the treatment of pneumonia, typhoid fever, nephritis, and the work being done on the stomach, intestines, and gall-bladder; but how little do we hear of the bacterins being used in connection with other and older lines of treatment?

Is this because this line of treatment has not been generally accepted as being of use, maybe of immense importance, or is it because it has been thoroughly tried out and found lacking? I am inclined to think that neither conclusion is correct. At any rate, I believe the great mass of medical practitioners throughout the country are neglecting one of the most potent and efficient forms of therapy at their command, one that is *never contraindicated*, one that can be employed in conjunc-

tion with any other form of treatment, and, last but not least, rarely does harm if it does no good. This certainly cannot be said of any potent drug.

Bacterial Invasion a Factor in Most Diseases

Most of the diseases with which the average physician has to contend sooner or later are complicated by bacterial invasion, if not frankly so at the start. Think this statement over carefully, going down the list: "colds," grip, tonsillitis, pharyngitis, bronchitis, pneumonia, tuberculosis, empyema; all these in the respiratory tract. A specialist could enumerate more. If the skin, nose, throat, ears, eyes, and genitourinary and digestive tracts be thoroughly canvassed, the list grows to overwhelming proportions.

Is the best and most efficient means of drug treatment always entirely satisfactory in the treatment of these diseases? We know it is not; but do we, as a whole, condemn our treatment even while administering it? We do not, except he be a therapeutic nihilist, and for him I have no respect; he is a hypocrite and should not be practicing medicine; he is in the class of the fakers, and no better.

We use mercury and arsenic in syphilis, quinine in malaria, salicylates in rheumatism, antitoxin in diphtheria, and call them specifics, in so far as specifics exist; but do they always fulfil our expectations? Failing to do so, do we cast them aside as worthless? Then, why, I ask you, should we cast aside the bacterins, without giving them a thorough trial, because they have not proved a cure-all or done as much as we have expected them to do? Let us be as reasonable and consistent as possible.

I am not going into an ultra-scientific discussion as to the action of the bacterins upon the human body, for the reason that I am not competent to do so; but, if I were, the mass of physicians would not be interested enough to dig into and wade through it. Those of my readers who would go to the bottom to obtain a comprehensive grasp of the subject I would refer to the works of Allen and of Wright, both Englishmen.

What we as active physicians are concerned with is the business of seeing our patients returned to health in the shortest possible time by any and all means at our command. The best of every cult, "pathy," and "ism" is not beneath us, if it has value and worth.

Take the case of the common "cold," for instance. If the patient is seen early enough, we can sometimes "break it up" after a few days; but "how about it" when it has continued a few days and is in full development? The condition usually will go on to recovery in spite of what we give the patient, but not until the host has developed enough "antitoxin" in his body to overcome the infection.

The secret of the action of bacterins is, that by their help the body is stimulated to the production of antibodies much more quickly and powerfully than by the infection itself, and without the damage which would result if a like stimulation (in amount) were to come from the action of the infection. This, then, is the whole action of the bacterins; and, getting down to cases, it really is very simple.

Little Danger from the Negative Phase

Considerable has been written about the danger of the so-called negative phase following an injection of bacterin if given in too large dosage or in too short intervals of time. Without going into a lengthy argument on this point, I will say that the consensus of opinion lately has been that this danger is greatly exaggerated, except possibly in the use of the acne bacterin, the latter fact being borne out by my own experience.

In the case of acne, I have found, the lesions have increased and all symptoms were augmented in some instances following an overdose of the bacterin or when injections were made at too frequent intervals. Still, no other harm has resulted, while, strange to relate, many subjects have shown a marked improvement after several weeks' lapse of time during which no treatment of any kind was given; and this occurred in cases that had proven very stubborn and refractory to other kinds of treatment. I have had this experi-

ence in my own work. One such patient was a woman, thirty-eight years old, who had had the disease for almost twenty years, had spent much time and money with first-class specialists, and was worse when she came to me than she had been at any time previously.

Case-histories are not always satisfactory. The truth is often juggled, to make good reading, and I am not going to give an account of my failures in this article. Other men are rushing into print, condemning the bacterins after trying them in cases where possibly they were not indicated, where the dose was too small or perhaps the bacterin used was not of the proper strain. We have had enough of such articles for a while. I started out to write an optimistic paper.

Threatening Pelvic Abscess

How many of you have been called to a case that presented the picture of a woman getting ready to have a pelvic abscess. No sign of pus as yet, but a hot, dry vagina, backache, mild fever, prostration, pelvic pain and tenderness, with a big mass presenting, either to the side or behind the uterus, which was hard, not fluctuating, rigid and tender, and which apparently had developed in a few days; sometimes with a history of a gonorrheal infection from one to fifteen years previous, and sometimes with no definite history, but cause for suspicion?

What form of treatment would you suggest to prevent the continuance of the condition and the prevention of the threatened abscess? Do I hear an Eclectic brother say, "Echinacea"? Very good, what else? Speak up, now, and don't be bashful. This case does not interest us at all surgically as yet. We are anxious to get the woman well without surgery, if possible, and in the shortest possible time. Can it be done by any of the older methods recommended in textbooks or elsewhere? If so, I confess I do not know how, except in a very few selected cases—few enough to constitute a negligible quantity.

Very well, then. Here we have a case in which we confess ourselves impotent without recourse to surgery, and even then we must wait until the pus is there and can be reached and drained. Is it not worth while to try the bacterins in our effort "to use every means at our command," instead of calmly sitting by with folded hands and letting "nature take its course?" This, by the way, is a cloak commonly used by the incompetent, to cover his lack of initiative.

I have described a case to you such as I have met several times in my work. Rarely has it taken more than a week or ten days before nearly all signs of trouble were gone, except, of course, for immobility of the uterus and adnexas, resulting from adhesions in some cases; and those that went longer than that—usually went on to abscess formation, were opened and drained, but (mark this) the convalescence and time of discharge was lessened whenever they had the benefit of the bacterin treatment, by as much as several weeks, judging from the length of time usually taken in similar cases where no bacterin was employed.

We cannot get along without surgery. I do quite a little of it myself of one kind or another (Smile, you surgeons!); but we can do something at times to prevent the necessity for it. If we do not avail ourselves of the opportunity when it presents itself, we are not on the square, either with ourselves or with our patients. The surgical fee is the biggest every time, but it is not always best for the patient to have recourse to the surgeon. Whom, then, does the surgery benefit?

Remember, please, that I have no quarrel with the surgeon. I am writing an optimistic paper on the use of bacterins. Of course, I cannot make a "Practice of Medicine" of it, but a few more cases covering other fields of medicine may not be amiss.

Streptococcal Infection of the Finger

How about the probable streptococcal infection in the index- or the fifth finger, beginning with a small scratch or abrasion, very painful, no deep pus, red streaks up the forearm, with enlarged, tender and painful glands in the axilla; no sign of pus anywhere, except a superficial oozing from the scratch on the finger. Clean out the scratch as best you can, using any antiseptic—I care not which—inject antiseptics under the skin, surrounding the site of entrance, apply hot wet antiseptic dressings, open the bowels, put the patient to bed; in fact, "do everything at your command" to arrest the advance of the infection. And then will you occasionally see a patient get progressively worse, with chills, fever, coughing, sweating, and finally develop septic pneumonia and die in three or four days from general septicemia, despite the fact that you opened the arm from wrist to shoulder over the red streaks, drained the axillary glands, applied hot wet antiseptic dressings to cover the whole, and gave supportive internal treatment!

Yes, you probably have seen such cases, and so have I. Have we used every means at our command in these unfortunate and horrible cases? Probably, if we have not heard of the bacterins we should say "yes"—but everyone knowing bacterin therapy will answer "No," most emphatically, "No."

Streptococcus Infections are Controlled

In the past year, for the first time in seven years of practice, I have not seen such a case go on to a fatal termination, and this for no lack of opportunity. I save these patients now, thanks to the bacterins.

This type of case is incredibly rapid in its progress. Thank God they are not always fatal, but they are always slow to reach the stage of convalescence and drag along to a tedious recovery with more or less impairment of health and function of affected parts.

If seen early enough and recognized, the advance can often be arrested with no further damage than an involvement of the axillary glands which sometimes, if the streptococcal infection is overcome, will merely go on to suppuration if the staphylococcus is a complicating factor.

The reason for this is plain when we consider that the streptococcus is not an abundant former of pus. It acts too rapidly for the host to mass a defense against it except in the form of antitoxin, and in fatal cases this is done too slowly to be of much avail. It is different with the staphylococcus; this is the simon-pure former of pus. It does not travel so rapidly and it gives the body time to meet its invasion by a massing of leukocytes at the point of trouble, war results, and the big guns are heard in the form of inflammation and swelling; and the dead on both sides litter up the battlefield in the form of pus.

In such a case the bacterin is of incalculable benefit. It stimulates the body to the production of antibodies as nothing short of a severe infection will do. Patients who recover without bacterin simply manufacture enough antibodies of their own to overcome the infection. The favorable course is due largely either to a milder form of infection or to a quickly responsive mechanism in a robust host. Were it not for the immunizing power with which the human body is endowed this would have been a dead planet long before our advent thereon.

I have endeavored to pick out a few of the many instances wherein we are "up against it" for a satisfactory line of treatment, and in which we can not expect to obtain good results if we follow the teachings laid down in

the textbooks written twenty years ago, and which have not changed materially since then. If you agree with me that our old line of treatment is not satisfactory and are looking for something to supplement it, I think I need not send you a "night message."

If you are perfectly satisfied with what you are doing and are content to let your competitor "put it over you" every day you practice, I have nothing more for you.

Autogenous or Stock Bacterins?

As to what bacterins should be used and whether autogenous or stock vaccines are best, much has been written and much breath and good space wasted in disputation.

To the strictly scientific man, the autogenous vaccine or bacterin (I use these terms interchangeably but prefer the term "bacterin") is undoubtedly in favor. But—in the case of the threatened pelvic abscess with no pus formation, how would you go about getting your culture and be sure that you had all the organisms present? Or, in the case of acute coryza, how many different germs would you expect to find and what good would the bacterin be to you by the time separate cultures were grown, counted, mixed and paid for, except that you would have the satisfaction of knowing that whatever had been done, at all events you had been strictly scientific?

In the case of the rapidly ascending streptococcal infection where would your patient be if you had to wait three or four days to have the bacterin made, only to find possibly that your culture showed "no growth" or that the mail had been robbed or the bottle containing the bacterin had been broken in transit? (All of which has happened to me.)

In the case of a chronic infection where the element of time is not so important and the opportunity for obtaining a good culture exists, where you have the advantage of a bacteriological laboratory in your midst (in other words, where conditions are favorable) it is often better to use an autogenous bacterin. But if you fail to get results with it, do not forget that often a stock bacterin will prove satisfactory where the autogenous has failed. It may be due to a combination of the two that you get the results, but that does not concern you, unless you wish to be "scientific."

Brush up a little on your bacteriology and familiarize yourself with the kinds of bacteria commonly at fault in the various infectious processes. It would, of course, be the height

of folly to give repeated injections of a typhoid bacterin in the case of uncomplicated (?) pneumonia and expect to obtain good results from it; yet I suspect that an equally absurd procedure has been gone through with in many instances and the bacterin damned as a delusion and a snare through no fault of its own.

The Correct Dose

As to dosage, you must use your own judgment, being governed entirely by clinical symptoms, unless you wish to avail yourself of the help of the laboratory in determining the opsonic index. When all has been said and done, the "clinical aspect" is worth the most to the patient.

I try to give the bacterins as I give drugs, as indicated and to full effect. It is better, unless the case is desperate, to start the treatment with a fair-sized dose rather than a large one and to repeat it inside of twelve to twenty-four hours, increasing it each time until an impression has been made as evidenced by a fall in temperature, arrest in the progress of the infection if it is superficial and can be seen or palpated, and by an amelioration of general symptoms, such as sweating, pain, chills, and the like.

[The general rule for dosage is to give in chronic cases or mild cases a good-sized dose, repeating in five to seven days; in severe acute cases give *small* doses and repeat at *short* intervals, as described by Doctor Barclay.—ED.]

As to the *modus operandi* I use an all-glass syringe with a gold needle of medium caliber. I do not like some of the packages of bacterin put out, as the needle furnished and which must be used, is too big and is usually dull; this causes unnecessary pain. Make the injection slowly. I take about a minute to it and find that the reaction is not nearly so marked as when given rapidly and with some force.

Method of Injection

It makes no difference where the injection is made, so long as it is anywhere under the skin and not just below a joint. Since much of my work is done in the office, I find that a convenient place is about an inch and a half above the left elbow in the outer aspect of the arm, directing the needle upward. Put the needle in swiftly and the solution in slowly. Try it on yourself and you will know exactly the best way to do it next time.

Sometimes a sharp local reaction will follow; usually in about twelve to fourteen

hours. Occasionally, if a heavy suspension is used and injected too quickly, considerable swelling will develop and possibly some discoloration, but if the needle and syringe are reasonably clean you need feel no alarm; rest of the part and the application of a hot-water bag or a pint whisky bottle filled with hot water and wrapped in a damp towel will quickly give relief.

I wipe off my needle with cotton soaked in alcohol and paint the part with a 5-percent solution of iodine before injecting. Upon removing the needle I cover with a little cotton held in place with adhesive plaster. I have never had an infection follow and have given hundreds of doses in this manner.

Following my usual custom, when possible I charge by the case, making sure that the cost of the bacterin is fully covered. When this cannot be done, I charge for the call and add fifty cents or one dollar for the bacterin. I have had no complaints.

Many men in the field probably hesitate to use this form of therapy because they do not understand the "workings" of it, and possibly for fear of being called unscientific by their brothers who may ridicule the giving of "dead bugs" in vast numbers when they are not positive that these particular "bugs" are the ones at fault.

To them I would say: How many of us know or stop to think of the exact action that aconite has upon the heat-mechanism when we give a dose of it to control a fever? We took someone else's word for it in the first place, and have proved its value to our own satisfaction many times since.

As for any fear that may be entertained as to subsequent harm following an injection of "dead bugs," if you, for instance, give an injection of dead pneumococci in a case where the pneumococcus is not at fault, you have done no more than to stimulate the host to a production of specific pneumococcus antibodies, which, if not needed, will cease when its superfluity is made manifest to the host. In other words, you have vaccinated the patient against a pneumococcus infection up to a certain point and time, depending upon the size of the dose and the condition of the patient.

Do not expect too much from the bacterins. They are not a cure-all nor yet a specific for everything, but they have undoubted value, and are worth trial when used properly and intelligently. Because of this they should become a part of our armamentarium in our fight against disease due to bacterial invasion. They are not to be used to replace indicated medicinal remedies.

THE ROAD

By JOHN RHUDDLAU.

I said, "At the end of the road
I'll sit me down and write an ode,
Lift up my voice and sing a song,
But songless now I'll trudge along,
Teaching my spirit to be strong."
Many and many a weary year,
Through many a land, both far and near,
Silent and sad, I kept the road,
Trudging, trudging beneath my load;
Yet still I thought of days afar,
Of twilight peace and one great star,
Of time when I should sing a strain
Would heal my wound and banish pain—
When lo! from out the dust and heat,
I heard a bird to warble sweet:

With lighter load I took the road;
I sang a song, I mused an ode,
Forgetting quite to be forlorn;
Yea, hoped at eve for toil at morn,
And heard in dreams a faery voice
That bade my listening soul rejoice:

"Today, today, the present hour,
Above the weed behold the flower,
And many a rose, from mile to mile,
With fragrance, fragrance all the while.
Awake, awake, and go your way;
His heart is young who loves Today;
The road is short to him who sings;
His feet are shod with golden wings."

"While yet 'tis day pour out your lay,
For night shall come when no man may."

Making Good in Medical Emergencies

By GEORGE H. CANDLER, M. D., Chicago, Illinois

EDITORIAL NOTE.—This paper is a further contribution to Doctor Candler's most interesting and helpful series on "Medical Emergencies," every installment of which seems to be more interesting than the one that precedes. The article, this month, will do doubt excite many a reader to contribute something in the way of suggestion for the treatment of infantile convulsions.

CONVULSIONS (INFANTILE)

EVEN the experienced physician is apt to have his nerves and his ability severely tried when called upon to treat the more severe form of infantile convulsions; but a young practitioner attending his earlier cases will feel tempted to regard with unmitigated contempt the therapeutic procedures he has been taught to employ, and may wonder whether fruit-farming or plumbing might not prove more desirable occupations.

In the first place, the surroundings under the circumstances are not conducive to calm thought or deliberate procedure, and, then, a convulsed child is not a pleasant object to contemplate; more especially so when the seizures recur at short intervals despite every effort to control them. Not infrequently the attendant not only has the child to treat, but the mother or other female relatives besides. As to this phase, more than one reader doubtless will have had an experience similar to that of my own one time, when I found myself dividing my attention between the child, held in a mustard-bath by a neighboring "wise woman," and the mother, tossing and screaming on a bed in the adjoining room, and, for good measure, the young father in a "dead faint" on the kitchen floor. If the average man, ruthlessly called from a sound sleep, to dominate such a state of affairs, does not regard it as an "emergency" and wish most sincerely that he knew just what was the right thing to do, he is either to be congratulated or pitied for his lack of imagination.

The Cause Often Obscure

Unfortunately, it is impossible to state with any degree of accuracy the cause of most eclampsias. We know, of course, that a convulsion is "a motor discharge resulting in muscular contraction," produced, possibly, by irritation of the cortical cells of the brain, either directly or reflexly, or, it may be, by toxic substances in the blood.

We also have been taught that the condition is most often observed in children under two years of age. The laity insists

that convulsions are most likely to occur when a child is cutting its "eye-" or the "stomach"-teeth; and, as a matter of fact, after one has been in general practice for a decade or so, he begins to have a certain amount of respect for lay perspicuity. At the period indicated, "reflex irritation" most certainly may prove a factor, but whether the process of dentition or a stomach rebelling at the presence of indigestible material is to be regarded as the fundamental cause is another matter.

The mere fact that seizures stop promptly after the stomach has been emptied by the administration of 1-20 to 1-10 grain of apomorphine, hypodermatically administered, does not warrant the conclusion that the convulsions were caused entirely by abnormal gastric conditions. For, it must be remembered, apomorphine is a decided sedative and relaxant, and by producing emesis by means of this drug we simultaneously relieve cerebral congestion.

It is only by prolonged observation that one can differentiate with any degree of certainty between the ordinary convulsion of dentition or indigestion and the eclampsia ushering in an acute infectious disease or that bespeaks the condition of nervous disequilibrium, which leads to epilepsy. True, some writers assert that reflex convulsions from any cause, if repeated, may set up epilepsy, but, as for myself, I prefer rather to think that the constant occurrence of convulsions is an evidence of the epileptic condition of the subject.

Until we know a great deal more about the nervous system, the body-chemistry, and the nature of the prime animating force itself, we must continue to theorize. In the meantime, when confronted with a child in convulsions, we must do such things as a limited knowledge of causes and a wide experience of effect lead us to regard as most beneficial.

Some Important Facts to Be Remembered

It is well to bear in mind certain definite facts. During the first few days of life, convulsions may evidence meningeal hemor-

rhage; and, if the labor was tedious or instruments were used, this or some other brain disorder may reasonably be suspected. A single convulsion (especially if the child has been out of sorts for a day or two) may replace the initial chill of pneumonia or other acute disease. Usually, when this is the case, the seizure has passed and the child's temperature is rising rapidly when the physician arrives. Inquiry may reveal earlier exposure to infection, chilling, a cough, refusal of food or difficulty in swallowing, and this will facilitate the diagnosis. Under such circumstances, it is not necessary to "treat for convulsions," as young parents invariably will demand; "watchful waiting," elimination and restricted diet are the essentials. It will also be wise to order the child isolated in its bedroom for the next day or two.

A Practical Illustration

Within the month, I was called to see two children in convulsions. The first, a sturdy boy, a year and eight months old (one of a family of three, with normal healthy parents) had a single convulsion at the eighth month. Apomorphine hypodermatically and a hot mustard-bath (administered before my arrival), together with a copious high enema were all the therapeutic procedures required at that time. The child's health seemingly had been perfect after that.

Upon my arrival at the house, the child was found in a mustard-bath, beside the kitchen-stove, and just entering the third seizure within the space of thirty minutes. The mother explained that the boy had been perfectly well until an hour ago, when he crawled up on her lap and refused to be put down. Soon she observed that he was "white around the mouth," and then, without any warning, his body began to twitch and stiffen, the eyes rolled up, and the seizure was on. Being instructed as to what to do in such an emergency, the mother promptly put him in a hot bath; she also gave an enema and a small teaspoonful of wine of ipecac. A neighbor called me up by telephone, but before she could convey her message a second seizure occurred—more severe than the first one. The third attack (already referred to), developing in my presence, lasted several minutes, and it ceased only as the emesis produced by my injection of apomorphine occurred.

After vomiting, the child lay back, relaxed; the pupils were evenly dilated and the skin felt moist; the pulse ran 110; respirations, 18; temperature, 100° F.; the abdominal wall

was flaccid and the bowel had been thoroughly cleared out by means of an enema, and the bladder also was emptied. Then chloral was given per rectum, and, after half an hour's observation, the opinion was ventured that no further seizure would occur. However, almost with the words the child stiffened again—and I do not care to see any of my patients in a worse condition than was this little fellow before I could obtain any chloroform.

Moral: *Always* carry a vial of chloroform with you.

Difficulty of Securing Control

To make the story short, everything that could be done was done, yet, every eight or ten minutes the child would awake from a semistupor, give a faint cry, then become convulsed. The lips were drawn tight along the gums, thus emphasizing the typical risus sardonicus of the face; the limbs first twitched and then assumed steel-like rigidity; respiration almost ceased, cyanosis deepened, the pulse at the wrist became uncountable first, then almost indistinguishable. Certainly an alarming condition.

The untried physician, confronted by these conditions in a "new family," might well believe that his hair was turning gray. Here, fortunately, I had perfect order, implicit obedience, and the unwavering confidence of the parents; for, I had attended the mother before her marriage and delivered her of all three children. But *now* it certainly did seem that I was powerless—without knowledge, without effective weapon to save from the Grim Rider a child who, a few hours earlier, had made the house resound with his healthy voice. Chloroform, chloral, and the bromides (by rectum) did not prevent nor seem even to modify the severity of the attacks. A portable oxygen apparatus (secured from my house) helped a little during the cyanotic stage.

The choice now lay between morphine and some potent cerebral sedative and relaxant. I hesitate to give morphine to any child under such circumstances, so administered a full dose of lobeline sulphate. The drug was given just as a seizure passed and within four minutes the body was limp as a piece of wet rag, the forehead beaded with perspiration, and the white area about the mouth and nose so pronounced as to be startling. The child slept however—slept three hours, and has had no further convulsions.

Two days later, after the third thorough course of calomel and castor oil, my little

patient finally voided three *whole* navy beans!

Query: Did *they* cause the convulsions?

Another Illustrative Case

The other child was eleven months old and had a convulsion at 7:00 a. m., from which he had not recovered entirely when I arrived fifteen minutes later; that is, he was not thoroughly conscious, and the limbs were still twitching slightly. At this time the temperature was *subnormal*. The usual hot bath and enema were given and, as the skin was cool and pale, minute doses of atropine were administered. An examination of the chest revealed an apparently incipient pneumonia; within three hours the temperature was 102° F., and the diagnosis was positive.

These cases serve to illustrate the fact that no two convulsions are alike and that while there is no difficulty whatever in recognizing the condition itself, it is not always an easy matter to ascertain its cause.

It is fairly safe to state that eclampsia occurring without previous indisposition is of functional origin and in most cases the prognosis is favorable. However, it is well to be guarded in one's statements, for even a bean or other undigested matter may set up convulsions severe enough to prove fatal in certain individuals. Intestinal parasites—especially if they migrate—also frequently cause severe seizures in children. Convulsions occurring late in any disease are to be regarded as extremely ominous.

The Basal Treatment

Granting that he could proceed more intelligently if he knew the causative condition, the physician must base his treatment upon such evidence as is available. If the child is not already in a hot mustard water bath or pack, the sooner it is placed there the better.

While working, ask questions, and *observe* closely. If the patient is an infant, inquire whether the food has agreed with it or whether it has been changed recently. Have the bowels moved naturally? Have heavy curds been vomited? Is there any possibility of injury by a fall, or otherwise, or has it swallowed a foreign body? Has urine been voided? Always, while asking, verify the accuracy of the information obtained, if possible.

Examine the abdomen; a tense or tympanic condition may mean retention of feces, intestinal obstruction (especially if vomiting has occurred) or extreme fermentation.

The bladder may be distended, even though

only small quantities of urine have been voided.

Look particularly for evidence of rachitis. Convulsions are particularly frequent in rickety infants—and they are likely to be troublesome.

Foreign bodies in the nose and ear may cause convulsions; an examination will show their presence or absence.

The Medicinal Treatment

If the convulsion may reasonably be supposed to be of functional origin, give apomorphine hypodermatically (gr. 1-20 to 1-10), then pass a catheter into the bowel and flush it thoroughly with warm normal saline solution, repeating the injection if the first water is expelled violently in gushes. Give a full dose of chloral (preferably by rectum) and hyoscyamine by the mouth. The "calmative" formula originated by me some years ago will prove effective in most cases. (It consists of hyoscyamine sulphate, gr. 1-2000; monobromated camphor, gr. 1-64; scutellaroid, gr. 1-32; oil of cajeput, oil of anise and menthol q. s.) One-half to one tablet is administered in hot sweetened solution and the dose repeated if necessary in fifteen or thirty minutes. Push till flushing of the face or dilation of the pupils is secured.

If no further convulsions occur after emesis, the enema and hot bath, and the condition seems satisfactory, order calomel gr. 1-10 to 1-6, every fifteen minutes till a grain has been taken, and two hours after the last dose give a laxative saline or one ounce of castor-oil.

Milk and barley water should be the only food allowed an infant for twenty-four hours; but older children may receive such light foods as milk toast, cereal gruel, soft-boiled eggs, and the like. To such patients, give diastase and papain (gr. 1) after each meal as a digestive aid.

Scutellaroid and solanine may be administered three times daily for a few days as nerve sedatives. If the presence of worms is suspected, santonin should be given with the calomel, and the same course of medication repeated on the third day.

During an attack, should the convulsions persist, give lobeline sulphate, gr. 1-200, hypodermatically; it may be necessary to repeat this dose. It is essential to secure *complete* relaxation. A few drops of chloroform may be administered upon a folded handkerchief held an inch or two from the face, during the convulsion.

(To be continued)

Some Accuracies of Practice

The Correlation of Precise Methods of Diagnosis and Treatment

By B. G. R. WILLIAMS, M. D., Paris, Illinois

Author of "Laboratory Technic for Practitioners"

EDITORIAL NOTE.—This month Doctor Williams takes up "Oxaluria," an interesting subject about which most of us know little. He gives us some useful "pointers" concerning its accurate diagnosis and successful treatment. Read the article through carefully. You will obtain much help from it.

NOW we come to a crystalline deposit that is of especial interest to the man who does not do major surgery alone, but must fall back upon the use of drugs. This subject is regarded as a "perfect bore" by the journals which cater to the operating class and gains but little attention from the belly-technician.

"Belly-technician?" you echo? "Ridiculous!" And, so, I am obliged to slip in an explanation parenthetically.

Ah! dear reader, can it be that you have failed to keep informed upon this question of technicians? Land sakes! Tomorrow, if you wish to be in style, you must be a technician, not a physician. Technicians will be distinguished (such is the trend) by the locality in which they work. I shall be a "laboratory-technician." (For has not the term been thrust upon this group of physicians, February 7, 1914, by the classified advertisements of a medical publication which carries no questionable advertisements; and does that not settle the matter?)

The man who performs the iridectomy will be an "eye-technician;" he who finds his place at the bedside of the sick babe must accept the term "nursery-technician;" and he who dispenses to his patients or prescribes for them cannot reject the name "dope-technician." *The Technical Record* will meet competition—*Annals of Operative Technology*, *Journal of the American Dope-Technicians' Association*, etc. So we shall have nerve-technicians, skin-technicians, oral technicians—

Hold! Several years ago, at one of our universities, a medical professor insinuated that the members of a certain dental class were but little more than technicians, comparing them with iron- and wood-workers. Thereupon these men refused to attend this professor's lectures, and their action was not criticized by the faculty. Physicians may be content to be technicians, but will dentists?

Now hear him squeal—I mean the fellow who started this technician reform. He first of all is a technician, and the term will stick.

Bawl, if you will, fattened, royal, self-decorator; you dare not kick against the pricks:

Class A pseudo specialist: "But, kind citizens, I am an honorable technician!"

Class zero physicians: "So are we all—all honorable men."

"Say, fellows, let's be fair? Seems like I've started something. If I've got to be a technician, all right; but, O, Lord, not a belly-technician! Be a little lenient!"

So, henceforth our repentant brother shall be known as an "abdominal technician."

Oxaluria Dolorosa

The subject of painful oxaluria (oxaluria dolorosa) I have covered so thoroughly elsewhere that now I can but review some of its chief features. For the laboratory aspects, I shall refer the reader to *The Archives of Diagnosis*, July, 1913; and for the clinical aspects, to *The Medical Record*, June 14, 1913.

Hematuria and renal distress (ureteral distress) may arise from the persistent passage of certain forms of crystals of calcium oxalate through the upper urinary tracts; and the formation of a calculus is not necessary for the occurrence of such hematuria and connected symptoms. Furthermore, this explains many of the milder cases of nephralgia, as well as some of those protracted and severe ones which at operation reveal the kidneys apparently normal.

The symptoms often are bilateral in this primary form of renal disease; still, unilateral pain does not rule out painful oxaluria. The skiagraph is negative; and here the negative evidence is as important as the positive, because calcium oxalate would necessarily be included in the makeup of any calculus which might be present. (We have not concluded that calculus and oxaluria dolorosa might not coexist.) The symptoms and signs go hand in hand with the cause: the irritation is a moving one; hemorrhage and pain increase directly as the amount of sediment increases. The crystallization in pain-

ful oxaluria is specific, being truly acicular, or identical with that of the raphides of the poisonous arisæma, for example.

The line of treatment here suggested is that which was advised in an article contributed to *The Medical World* last January, namely:

Advice in regard to diet has been somewhat misleading, inasmuch as it has been too generalizing. Our dietetic principles have been well worked out and apply to practically all cases, but this is not true with regard to the medical treatment. That is to say, observation has taught us that a drug which may prove of great value in one instance entirely fails us in the very next. I have seen oxaluria dolorosa relieved by hexamethylenamine (fermentations of unknown but acid nature in the upper urinary passages); I have witnessed its relief by excessive water drinking and diuretics (concentration of urine favoring precipitation of oxalate of calcium as sharp crystals); I have seen hydrochloric acid and diacid sodium phosphate perform miracles in the painful oxalurias, but not when the acidity was excessive.

While indications are not always clear in the matter of medical treatment (for our knowledge concerning the etiology is not complete), they usually are very plain, indeed, and are furnished by a careful examination of the urine in a given case. In other words, the dietetic treatment resolves itself into an attempt to reduce the intake of oxalates or oxalate precursors, but the medical treatment aims at an effort to prevent their precipitation as insoluble acicular crystals in the upper urinary tract. Let us say, "prevent precipitation" rather than "redissolve precipitate," because we believe that, once precipitated, these crystals are not easily redissolved; in fact, I know of no asserted saxifragrant.

The Dietary Aspect of Oxaluria

It may be well to look first into the dietetic aspects, since this advice will apply in almost every case.

We must, if possible, reduce the oxalate intake; furthermore, we must reduce such foodstuffs as are likely to give rise to oxalates, by virtue of fermentation and otherwise. Prescribing of water should be included at this point, inasmuch as most of these urines are very highly concentrated; although we must remember that merely diluting a urine will not always relieve painful oxaluria, and other urinary findings must be considered.

The recommendations offered below are

based upon actual observation in cases treated by physicians and in which we have made rather complete laboratory studies. It will be observed in these tables that carbohydrates are, as a rule, reduced, for we believe that when excessive they favor fermentations in which oxalic acid is formed. More than this, clinical evidence is suggestive of the fact that oxalic acid may be vicarious to glucose (in diabetes).

It has been found that these patients do well upon meats, but, also, that these should not, as a rule, be fried. They may eat in desired amounts oysters, beef, fish, mutton, chicken, game, salads, peas, eggs, and milk. Fresh milk, boiled milk, skimmed milk, buttermilk, butter, cheese, and so on, may be taken in large amounts. An exclusive milk diet, however, is not advisable; it may be well to prescribe a milk diet as a nucleus when beginning treatment, and to add slowly to this. A milk diet may be rigid in the acute case.

Water should be taken in tremendous amounts. If the patient suffers from nocturnal enuresis (to withhold water entirely, means to concentrate the urine, thus favoring irritation), water may be pushed during the fore part of the day and avoided in the evening. Lithia tablets may be added to the water, to give it a "distinctive taste."

Prescribe along lines similar to following: Drink a cup of hot water before breakfast, plenty of water during this meal, and a large cup of cold water after breakfast. (Water may be acidulated or rendered alkaline, according to medical indications.) A large cup of water should be taken every hour through the morning and in the early afternoon. After 3 p. m. the hourly glasses may be left off if the child suffers from nocturnal enuresis.

The following articles may be eaten only in moderate amounts: Bread, hominy, rice, toast, oatmeal, batter-cakes, crackers. Beans and potatoes favor fermentation, and must be avoided in acute cases or taken in but small amounts where absolutely necessary to vary the diet. Soups may be "pushed" (except at supper in nocturnal enuresis). When preparing soups, avoid vegetables named below. Empirically, pies, cakes, and fried dishes are to be feared, possibly because they cannot be or are not eaten in moderation.

The list of vegetables to be avoided is well known to most physicians. Very nearly every fruit and garden vegetable is included. However, the most pernicious group of foodstuffs for these patients, and which should be

almost entirely avoided, are these: Candies, syrups, ice-cream, tomatoes, pie-plant, oranges, carrots, string-beans, garlic, asparagus, celery, spinach, plums, strawberries. Obviously, this works a great hardship upon these patients; but it is a notorious fact that summer oxalurias are more prevalent and, as a rule, more severe than those of the colder months. Apples, pears, peaches, and melons contain small quantities of oxalic acid, but can be allowed in moderate quantities.

Hints About the Medicinal Therapy

Indications for the use of the several drugs usually are supplied by the uranalysis. In some of the baffling cases, we may also be compelled to investigate gastric hypoacidity or hyperacidity; but as a rule the urinary condition gives the most usable information.

These urines generally are concentrated; the specific gravity may soar so high that diabetes is suspected. It is easy to see how oxalates may be precipitated in such a urine; and such a urine should be diluted by the prescribing of water and mild diuretics. Often these urines are neutral or alkaline. Thus, if there is no gastric hyperacidity to contraindicate, acids may be called for. (I have witnessed excellent results, in one case, from the use of free mineral acids.) However, the normal acidity of the urine is supplied, not by free acids, but by acid salts, especially diacid sodium phosphate. Certain organic acids have been recommended in this connection, but these are very closely related to oxalic acid, and I see no rational basis for employing them.

Sometimes these urines are excessively acid, in which case, acid treatment of course is distinctly contraindicated, inasmuch as it may actually favor the absorption of oxalic acid in the duodenum, not to speak of increasing an already excessive acidity of the urine. Of course, alkalis may be given, but I have never witnessed good results from them.

I have come to believe that oxalate precipitation may be favored by certain fermentations as yet but little understood but acid in nature, these high in the urinary tract. And thus in these very cases I have observed some beautiful results from the use of hexamethylenamine.

Magnesium has been recommended as a drug perhaps of value in many cases of painful oxaluria. I have not seen it tried, but doubt its value in the form of the sulphate, such as mostly is advised. Very little of this salt would be absorbed; while, upon the

other hand, it would draw water from the tissues into the bowel, thus concentrating the urine still further.

As to the Urinary Cell Elements

Let us now consider the cellular elements which may be found in the urine. The worker must resort to differential counting in many cases to decide just which types of epithelial cells are most important.

Bladder-cells occur in cystitis, and when in considerable amounts suggest a rubbing-off by mechanical means; but a second thought should lead the worker to distrust this explanation. If a stone is present, this might, of course, rub off some cells; however, these cells may be present when no such mechanical factor exists. A soaking-off is more likely to prove the explanation. Changes in reaction, products of bacterial fermentation, retention of the abnormal urine, and the factor of concentrated solution, all these play an important part.

The remedial measures are plain: correct the reaction, decrease fermentation, relieve retention, and so on. Really, it is not a very serious matter, unless large numbers of cells are lost; for the function of the bladder-cell is protective only, and they probably are easily regenerated. We shall meet a different problem in the case of the highly specialized kidney-cells. Ureteral cells may be lost in a severe case of oxaluria dolorosa. Treat the cause.

Kidney-cells occurring in the urine in considerable numbers or persistently is a matter not to be taken lightly. The pathologist tells us that the cell from the uriniferous tubule, when lost, is not regenerated, and that its neighbors must take upon themselves the work of the lost one, or else this work be left undone. Cells from the renal parenchyma are easily identified in the urine of nephritics. I cannot enter into anything like a thorough discussion of the varied aspects of desquamative nephritis (or nephrosis), except to call attention to some of the causes concerned, that we may find a foundation for treatment.

In bilirubinuria, we have an example of a desquamative nephrosis. The renal cell is unable to excrete the bilirubin or, in doing so, is slain and floats away in the urine. In primary contracted kidney, we find another cause for desquamation. The parenchyma may be last to suffer, but eventually the contraction of the organ causes a mechanical dislodgment of the epithelial cells, and they leave the basement-membrane forever. An epithelial shower in a plainly interstitial

Bright's disease must be regarded as a fact of grave prognostic portent.

Neither of these processes can be regarded as chief, bringing death to the ultimate secreting unit of the kidney, for all of the nephritides must be regarded as parenchymatous, at least in part; and here acid retention (Fischer) appears to be the chief factor in desquamation (just as we have shown it to be in cloudy-swelling, coagulation necrosis and granular disintegration). In fact, the acids may pick upon the cement-substance first of all, dissolving it, so that the cells are no longer bound to the membrana propria, but slip off into the current, either singly or in groups.

Briefly, dilution and alkalization are very strongly indicated. I can do no better at this time than to quote from Fischer in this connection (*J. A. M. A.*, May 31, 1913):

"The toxin (unknown) is responsible for the abnormal production of acid in the cells of the kidney. . . . But it should be recalled that the acid intoxication is itself proportional to the concentration of the acid; and this, too, we must keep as low as possible. This can be done by giving water. It must be insisted upon, moreover, that the administration of water shall be regular. . . . The night administration of water is as important as that through the day, for the production of toxin does not stop with nightfall. If the water contains an alkali of some sort, so much the better. If the patient will tolerate it, 0.5 to 1.0 Gram of sodium carbonate may be added to each glass of such alkaline or plain water."

I have gone much more deeply into the diagnostic significance of renal cells in another article (*American Medicine*, Sept., 1913), to which I shall refer the reader.

Spermatozoa in Urine

Spermatozoa may be found in urines under a number of interesting circumstances. Conditions may be classified as normal, semi-pathological, and pathological. Normally, spermatozoa may be found in the urine voided just after coitus, and no treatment is indicated. Distinctly pathological is the escape of spermatozoa secondary to tuberculosis of the prostate gland, during a severe typhoid, in diabetes, in painful oxaluria, and so on; and the treatment must be aimed directly at the cause.

It may be ventured that most cases of spermatorrhea are truly pathological, perhaps all of them are. Careful study often will show some lesion of the genitourinary tract—

frequently an old gonorrhea. But now and then we run across an obstinate case where, if any such lesion is present, it cannot be discovered either by the history or examination. Occasionally the loss of seminal elements is startling. The urine may bear the peculiar rank odor, may be turbid, and the microscope show hundreds of the spermatozoa in each field. These patients often masturbate excessively; and this should be stopped by mechanical means as well as by appropriate mental treatment.

Chromium sulphate is advised as an empirical measure in these cases. It will fail in more than 75 percent of all cases—that is my observation; but now and then it will give results that will more than compensate for the failures. Sedatives are often advised; but I am convinced that these work more harm than good, especially in those who masturbate, in that they relax cerebral impulses which might inhibit this almost truly reflex act. The clinical proof is seen in epileptics—not because they are epileptics, but because they are under the influence of the bromides. When all else fails, the passing of cold sounds or even circumcision may effect a cure.

Lipuria and Chyluria

Fat droplets may occur in the urine after catheterization; or the smegma may contribute an occasional dab of grease; and in either case such findings are of no pathological significance. It is an interesting point that fat metastases often occur after fractures, especially in the aged, and such fat may be voided by the urine. Fatty embolism may be coincident, as I have witnessed in two fatal cases, once at autopsy and another time where the symptoms were quite conclusive along with lipuria.

Those of us who practice in the tropics will have to deal with filarial chyluria, but it is doubtful whether the rest of us come into contact with many cases of true lipuria. I venture to say that the finding of large droplets of free fat in the urine usually means contamination of the specimen with extraneous matter. Nevertheless, careful urinary work often will demonstrate small fat droplets within casts or within the protoplasm of desquamated renal cells (pioepithelium). Such findings mean fatty degeneration of the secreting kidney-cells and is very closely akin to cloudy-swelling. In fact, the two processes appear to go hand in hand. The treatment for degeneration and desquamation of the renal cell has been outlined above.

You will see occasional references to the finding of malarial pigment in the urine. It seems to me that these statements lack confirmation by our leading workers. In case of question, better examine the blood.

Tuberculosis of the Urinary Tract

Repeatedly I have called attention to the fact that tuberculosis infections of the urinary tract are characterized, not by the presence of pus, but of truly mononuclear cells. By the time the urine is submitted for examination, it usually does happen that true pus will be found (polymorphonuclear cells); but it is very likely that these are the result of secondary infection, fermentations or other complications. Taken early, when the urine still is sterile except for an elusive tubercle bacillus now and then, the cells are mainly mononuclear. Occasionally secondary infection does not occur for years, or, if so, does not approximate the intensity of the tuberculous reaction.

Some time ago I examined the urine in a case of old tuberculous prostate gland in which practically every cell bore a single nucleus; and there was no evidence of breaking down of these cells. These cells are of diagnostic importance, but call for no special treatment of themselves. It is thought that they come from fixed cell anlage, and not from the blood. They have been called "chronic-irritation cells." They must not be confused with renal (epithelial) cells or with true pus-cells; and discrimination sometimes is difficult.

True pus, or large numbers of degenerating polymorphonuclear cells, has indications of its own, in addition to those suggested by the reaction of the urine, mechanical factors, such as stone, and so on, and specific pathogenic bacteria. Nowadays the first thought is hexamethylenamine; but I am surprised at the small dosage prescribed by many physi-

cians. It has been repeatedly proven that in obstinate cases of colon cystitis and similar maladies nothing less than 15-grain doses given three or four times daily are likely to set free efficient amounts of formaldehyde into the urine. Furthermore, in the case of an alkaline urine it is quite a waste of the drug to continue it unless the reaction is first changed to acid.

Several years ago, I undertook to interest pharmaceutical houses in the merits of diacid sodium phosphate, the only rational urinary acidifier. They refused to be interested and one by one advised me that I was on the wrong track. A month or so ago, however, this substance was added to the "New and Nonofficial Remedies" (no credit to me). By and by we shall be able to secure this drug without ordering from chemical factories. If necessary, acidify the urine by means of this salt and then push hexamethylenamine; and the results will be beautiful in those very cases where this drug before seemed to be without effect.

Another remedy which seems of decided value in this condition is arbutin, the active principle of uva ursi. It is antiseptic but not powerfully antiseptic; yet somehow it seems to add "tone" to the entire genitourinary mucosa, thereby exercising a powerful restorative action—apparently by no other remedy.

Concerning red blood-cells, I shall have little to say. Their diagnostic significance would take many pages of this journal. Advice similar to that suggested under hemoglobin may be given here. We should like to treat the cause in every instance; but the cause cannot always be detected. We may be forced to call to our aid the "abdominal technician."

Next month: Indications Suggested By the Bacteriologic Analysis of the Urine.

Refraction for the General Practitioner

By THOMAS G. ATKINSON, M. D., L. R. C. P. (London), Chicago, Illinois

Professor of Neurology, Chicago College of Medicine and Surgery; Author of "Essentials of Refraction"

THE eye is a refracting instrument, the degree of curvature and the relative densities of the media of which are of such a dioptrism that in a normal eye in a state of rest parallel rays are exactly focused upon the retina. From every point of an object looked at, diverging rays of light proceed in all directions. One ray out of each of these groups strikes the surface of the eye perpendicularly and, so, passes through unchanged.

This is the "ray of direction" that passes through the nodal point. The rest of the rays in the group (or such of them as are intercepted by the eye) virtually are parallel by the time they reach the eye, and are so refracted by the eye at rest as to be reunited at the retina with their principal ray.

Thus, every point on the object is represented by a focal point on the retina, and the image of the object is clear, like the object itself.

As a matter of fact, as already pointed out, the refractive system of the eye is a compound one, made up of three media (viz., the aqueous humor, the vitreous humor, and the crystalline lens) and three surfaces (the cornea, the lens, and the vitreous humor); for optical purposes, however, it is regarded as a single refractive system, with a net dioptrism of about 45 D. and a refractive index of about 1.4.

Errors of Refraction

When the retina of the eye is situated exactly at the principal focal point of its dioptric system—that is, when, with the eye at rest,

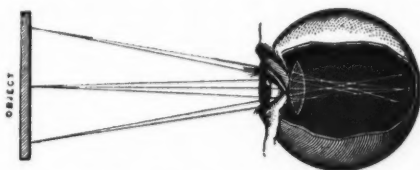


Fig. 1. Illustrating how axial rays and their divergents are focused on the retina in the normal eye at rest. The divergents have become parallel with the axials by the time they enter the eye.

parallel rays are focused on the retina—the refraction is normal, and then the eye is said to be emmetropic.

When the retina is not so situated, but is either within or beyond the principal focal point, the refraction is abnormal, and the eye is said to be ametropic.

When the retina is situated within the principal focal point, so that parallel rays are carried to a focus beyond the retina, the eye is said to be hypermetropic, or hyperopic. This is because the dioptric power of the eye is too great in comparison to the anterior-posterior diameter; or, contrariwise, the eye is too short for its dioptric power.

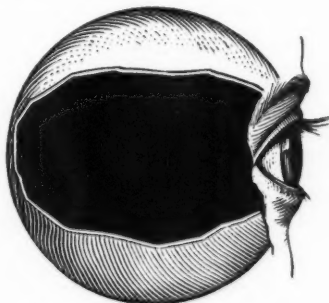


Fig. 2. The normal or emmetropic eye

When the retina is situated beyond the principal focal point, so that parallel rays are

brought to a focus in front of the retina, the eye is said to be myopic. This is because the dioptric power of the eye is too small for its anterior-posterior diameter; or, the eye is too long for its dioptric power.

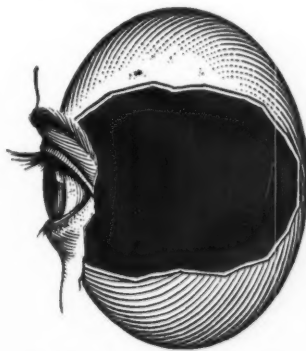


Fig. 3. The hyperopic, or short eye.

When the refracting surface of the eye is not the same in all of its meridians, so that all the rays do not focus at one point, the eye is said to be astigmatic.

When both eyes are ametropic, but the error in each is of a different character—for instance, one myopic and one hyperopic, or one astigmatic and the other spherically affected—the condition is called anisometropia. It is highly important, when testing

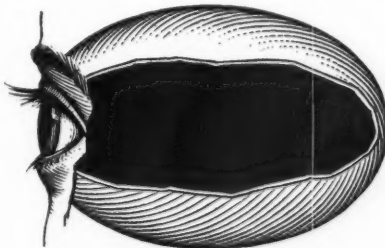


Fig. 4. The myopic or long eye.

refraction, to test each eye separately, excluding the other from vision meanwhile.

Principles of Correction

It is manifest from what has been said above that, in order to correct hyperopia, it is necessary to put before the eye a lens the curvature of which will hasten the focusing of the rays; in other words, the eye must be assisted by a lens of the same curvature as itself, namely, a convex, or plus, lens.

It is equally plain that, in order to correct myopia, we must apply a lens having a curva-

ture opposite to that of the eye, one that will delay the focusing of the rays, namely, a concave, or minus, lens.

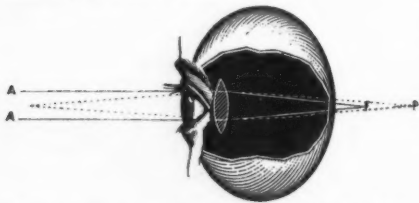


Fig. 5. Hypermetropic or short eye. Parallel rays of light, AA, from distance focusing behind retina at F. Dotted lines—rays of light from the object in focus still farther behind retina.

In astigmatism, we have a rather peculiar condition. The refractive sphere is, in this case, not a sphere, but is flattened in one of its meridians, like the earth. Being flattened in one meridian, it naturally is bulged in the meridian at right angles to it. Hence, we have an eye in which, in one meridian, there is a maximum curvature, and, in another meridian, at right angles to it, a minimum curvature. These two meridians are called the chief meridians. It is plain that these two meridians cannot possibly focus parallel rays of light at one and the same point, and therefore cannot give a clear image.

If one of the chief meridians is normal, that is, if it focus parallel rays upon the retina,

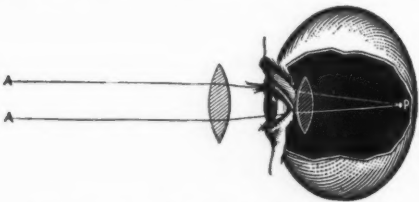


Fig. 6. Hypermetropic eye corrected by a convex lens, which hastens refraction of the rays, and thus brings the focal point forward. A A, rays. P, focal point.

the condition is called simple astigmatism, since only one meridian is out of focus. If the faulty meridian is too convex, so that it focuses in front of the retina, it is simple myopic astigmatism; if not convex enough, so that it focuses behind the retina, it is simple hyperopic astigmatism. If both chief meridians are out of focus, and both focus before the retina, it is compound myopic astigmatism; if both focus behind the retina, it is compound hyperopic astigmatism. If both chief meridians are faulty, one focusing before and the other behind the retina, it is then mixed astigmatism.

The eye normally is a trifle astigmatic, the vertical meridian (90 deg.) being slightly more

convex than the horizontal (180 deg.), but as long as this does not impair clear vision it is not regarded. In pathological astigmatism, the chief meridians generally follow this same order, namely, the vertical usually is the most convex, and we then say that the astigmatism is "with the rule." However, it frequently is "against the rule."

To correct astigmatism, we make use of a segment of a cylinder, convex or concave, as the case may be. According to the laws of refraction, those rays which enter the cylinder along the line of its axis strike the surface of the lens perpendicularly, and are not refracted. Only those which enter at right angles to the axis are refracted. A cylinder, therefore, hastens or delays (according as it is convex or

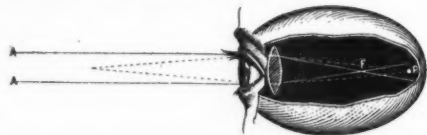


Fig. 7. Myopic or long eye. Parallel rays of light, A A, focused too soon at F. Dotted lines show object nearer the eye focused farther back.

concave) the focusing of the rays in one meridian only. The rule is, to correct the most convex (or least concave) of the two meridians up to a point where it is the same as the other. The remaining error, if there be any, is, then, clearly a spherical error, being the same in both meridians, and it is corrected by a sphere.

It will be seen that the only form of astigmatism that can be corrected with a single cylinder and no sphere is simple hyperopic astigmatism. Here, we simply correct, with a plus cylinder, the too convex meridian to the refraction of the other, and both are normal. Simple myopic astigmatism should not be thus simply corrected with a minus cylinder; but we should first make the least concave meridian (i. e., the normal one) equal to the

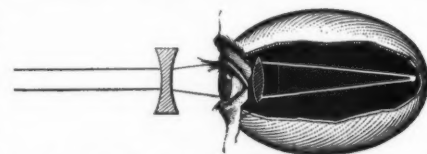


Fig. 8. Showing the myopic eye corrected by a concave lens, which delays refraction of the rays and therefore puts the focal point further back.

most concave (the faulty) one, by means of a convex cylinder, and then, having made them both concave alike, bring them both to normal with a concave sphere. In other

words, there is practically no place in correction for concave cylinders, but only in testing. Always we correct the most convex meridian with a plus cylinder to the curvature of the other meridian, and then make

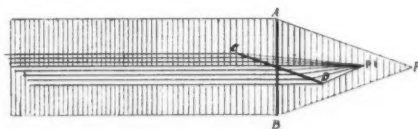


Fig. 9. Illustrates astigmatism, where the rays entering the eye in a vertical plane are focused on the retina: those entering in the horizontal plane are focused too soon.

both of them normal with a sphere of whatever curvature may be needed.

Presbyopia

There is a form of hyperopia, occurring in middle-aged and elderly persons, which depends upon the effect of age upon the crystalline lens, hardening it and robbing it of its elasticity and thus preventing the function of accommodation. The arbitrary point at which presbyopia is said to begin is when the near point recedes to 22 cm. This usually

occurs at about the age of 45 years, and increases about 1 D. for every five years thereafter. This will be seen to be indicated in the table of accommodative amplitudes given in a previous article. This fault is corrected,

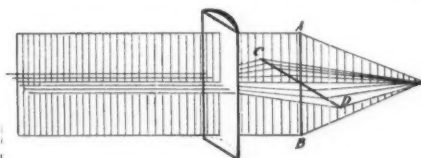


Fig. 10. Illustrates the correction of the foregoing, by a concave cylinder with its axis at right angles to the defective meridian. The rays entering the cylinder at right angles to its axis are refracted and their focal point carried back to coincide with that of the normal meridian.

of course, by means of convex lenses, the same as hyperopia.

We have now cleared the ground for a practical consideration of the technic for detecting, measuring, and correcting the various forms of refractive error. In my next installment I shall describe in detail the principles and technic of that most important procedure known as retinoscopy.

(To be continued.)

THE COUNTRY DOCTOR

BY WILLIAM F. KIRK

Day in, day out, night out, night in,
Where snow is thick and fees are thin,
He hustles with his cheery grin
To fight with ills.

The drives are long, the nights are cold,
He suffers hardships left untold,
To call upon some mother old
Across the hills.

Little he says about his pay;
Often he gives his skill away,
And though he's getting bent and gray
He has no wealth.

His life has been an endless trial,
His motto has been self-denial;
Freely he gives from every vial
For some one's health.

The gallant soldier goes away
While fife and drum and bugle play
Bravely to conquer or to slay—
That is his part.

The country doctor rides alone
Through rugged roads, o'er stick and stone,
To heal men, not to make them moan;
God bless his heart!

The Treatment of Cancer

Some Interesting Physical Methods

By G. BETTON MASSEY, M. D., Philadelphia, Pennsylvania

Radium

IT IS evident that the intense interest, that has been aroused of late in the possibilities attending the use of large quantities of radium in cancer, has been shared by well-informed medical readers of the newspapers as well as the general public.

The complete failure of the radium quantities hitherto employed in this country is well known to the initiated, but it was hoped that the larger quantities—costing in the neighborhood of one hundred thousand dollars—that were being used by a distinguished surgeon, so well known for his skill with the knife, would give real results in definite cures. For it is now known that only about five percent of the energy of radium can properly be used, namely, the gamma rays; it being essential that the alpha particles and beta rays be excluded by heavy screens of lead or gold. It was but natural, therefore, that those who have been disappointed by the results from a few thousand dollars' worth should regard with interest the possibilities that might attend the employment of really powerful radiations of gamma rays from large quantities of radium, properly screened.

It is yet too soon to reach a final judgment in this matter, in spite of disappointing reports and the statement of a physician who had the use of the whole output of a manufacturer of radium, that two out of five of his patients appeared to have had their lives shortened by the application of large quantities.

One definite fact has been developed, nevertheless, in connection with large dosage in carcinomas and sarcomas, not unlike what had been noted in similar growths under powerful Roentgen radiation. This is the deleterious effect on the patient of the absorption of decomposition-products of the broken-down tumor. Some deaths, at least, have been attributed to this circumstance. Whether cures of extensive carcinomas and sarcomas will result, can only be determined later, after the passage of sufficient time.

It is true that a number of small skin epitheliomas have been reported as cured by means of radium, some of them remaining so for periods as long as six and eight years. This is interesting, but of no practical im-

portance, since many of them would have been cured by Roentgen rays, and practically all could have been cured by a few-minutes' application of the ionic method and at a cost of but a few cents for current and electrodes.

Roentgen Rays

Many disappointments have weaned some physicians from their earlier enthusiasm for Roentgen rays in cancer. It should be realized, however, that the technic of this method may be capable of great improvement. Our tubes, targets, and so on, are yet but distant cousins of that classical college toy, the Crookes tube, and may not present the last word on the subject. We already have new methods of intensification in thermoradiotherapy, and any day we may have more effective tubes. In final analysis, the Roentgen ray and the gamma ray of radium are said to be identical.

But, even with ideal improvements, roentgenization should not be employed in cases that present the danger of daughter tumors being implanted at any moment by metastasis to internal organs if a quick and effectual method of eradication is available. Delay of only a day may change a curable case into one that is incurable, for it takes but a few seconds for the internal implantation of a graft. The slow roentgenization of this type of growth is a serious error of judgment. Its true place today is in certain widespread skin epitheliomas, or in cases that have been a failure under quicker methods.

Massive Ionic Destruction

When a growth is still local (and many large carcinomas and sarcomas remain local for months or years, or with but the second step of dissemination: a local involvement of accessible glands), it should be removed at once; and the writer believes that a growing tendency to regard cancer as parasitic and to take operative precautions accordingly, will attract greater attention to the method of immediate ionic destruction that he has used with good results for some twenty years.

In this ionic method, the infected cells are destroyed in a few minutes by driving into them electrochemically the ions of zinc, the latter uniting with the protoplasm and saline

constituents of the cells and immediately devitalizing them.

The older technic of this method, which has been applied to some hundreds of cases since 1893, is known as the unipolar method, or one in which but one pole, the positive, is applied within the growth, the negative being a large moist pad on a distant part of the body. This technic is still applicable to some large growths in which insufficient tissue is found properly to place the negative electrode, and is particularly applicable to small epitheliomas.

Details of the Method

The essential armamentarium consists of a source of direct, or galvanic, current—either the street-mains, a dynamo, or an ordinary galvanic battery; a meter; the means of controlling the current, so that it may be turned on and off without shock; an indifferent pad of sufficient size for the negative pole; and, for the active electrodes, pointed instruments made of zinc plate. For the smaller growths, these zinc-needle electrodes may be cut from sheet zinc (not galvanized iron), such as is used by stove-dealers, with a pair of surgical scissors or tinners' shears. For larger growths, a heavier zinc plate is necessary, particularly for the extreme length of seven inches at times employed. These electrodes are attached to fine copper wires that connect them with the positive binding-post of the apparatus.

With the patient lying on the indifferent pad, beneath which there is a metal plate connected with the negative binding-post, one or more active electrodes are inserted into the growth near the edge and the current gradually turned on; the electrodes usually having been amalgamated with mercury immediately before insertion in the case of large growths. A few minutes after an adequate current (from 10 to 200 milliamperes per electrode) has been flowing the evidences of ionization of the electrodes appear as a whitish discoloration of parts of the growth in contact with the electrode. This whitening of the growth is due to the union of the ions of zinc and mercury with the malignant cells. Additional electrodes are inserted until the whole circumference is included, and in about thirty minutes the whole of the growth and its edges are thus whitened, softened, and devitalized. The sterile slough is allowed to separate under natural conditions, leaving a healthy wound, which heals promptly under dressings of diluted zinc-oxide ointment.

The new technic differs from the older only in the placement of the indifferent, negative, pole in the center of the growth, the active electrodes being inserted, as before, around the edges and beneath, thus being bipolar. It increases the effectiveness of the method in the large growths, for the circuit is entirely local and much greater current-strengths may be used reducing the time under anesthesia to twenty-five or thirty minutes.

General anesthesia has of late been replaced by local anesthesia, as much as 1000 milliamperes having readily been borne under endermic infiltration with quinine and urea hydrochloride after the patient had been given a hypodermic injection of a full strength H-M-C tablet. While the writer repeats the assertion that the unipolar method may be used in the office for the destruction of small skin epitheliomas, under local anesthesia, by any well-equipped office practitioner, he has heard of attempts to use the method in locations too sensitive to permit of effective results. This could have been remedied by the preliminary administration of a cerebral sedative such as the hyoscine-morphine-cactoid combination.

A combination of these two methods of Anesthesia will permit the ions to be driven beyond the edges of the growth into normal tissue, with little or no pain and in one sitting; and nothing short of this degree of penetration can be expected to eradicate the growth.

The statistics of this method, as employed at the Sanitarium, include 300 cases of the several forms of malignant growths, a majority of which were desperately inoperable by ordinary methods, with 129 cures, as attested by systematic inquiries into the present condition of patients. The periods of time elapsing since cure varies from seventeen years to one year. Twenty two percent of the carcinomas treated were cured, 35 percent of the sarcomas, and 87 percent of the epitheliomas. Of the 234 patients under treatment since 1904, 9, or 3.84 percent, died as a result of or soon after operation.

The cases on which these figures are based are further divisible into operable cases, 93, and those ordinarily classed as inoperable 207, showing a large preponderance of the latter.

No Toxin Absorption Results

The dangers attending major ionic operations in grave cases are almost entirely due to secondary hemorrhage, the operation itself being bloodless. No evidence of absorption of toxins has been noticed—the serious danger

attending large radium-killed growths, as already stated. An essential feature of the ionic process is the sealing of the lymphatics and small veins at the line of demarcation, thus walling off the dead tissue, which virtually is outside the body at the completion of the application.

In conclusion, while freely admitting the value of the knife and of the radiation methods in properly selected cases of cancer, the writer urges the importance of the ionic method in cases promising but poor results from either the knife or radiation, since in a measure it combines certain features of both: the quick eradication by the knife and the

germ-killing qualities that must be the essential features of radiation. Moreover, although the major operation of ionic destruction demands a training not unlike that of the surgeon, the minor operation places in the hands of competent general practitioners a means of destroying small incipient growths that would become dangerous to the lives of the patients if the latter followed the usual routine of waiting for the growth to attain dimensions warranting the services of a distant surgeon; and the method in such hands may thus become a most potent means of lessening the progress of this terrible scourge of mankind.

THE CONQUEROR

BY THOMAS G. ATKINSON, M. D.

A boy walked forth 'neath the June's blue dome,
With a parched and feverous heart;
He longed to break from his quiet home,
And bear in the world his part.
For his soul was elate with a purpose great,
And his courage was strong and true,
And it seemed so hard, so hard, to wait
When the work was there to do.
In the hot forefront of the battle of life
He had sworn a crown to win—
Oh, when would the trumpet sound for strife,
And the fierce, wild work begin?

A man was pacing his room by night,
A warrior, stern and strong,
Who had dared to fight for the down-trod right
Against the purpled wrong.
But the ancient lie sat throned high,
And the truth was overborne,
And the only meed his valor could buy
Was hunger and hate and scorn.
And the noble rage his soul had stirred
No longer would be dumb,
And he cried, in the anguish of hope deferred,
"Oh, when will the triumph come?"

In the last fierce flush of the western skies,
In the glare of the dying day,
An old man lies, with filmy eyes,
Breathing his soul away.
"Ah, blusterer Death, you may shake my breath,
But you cannot shake God's will;
My body returns to its earth," he saith,
"His work will onward still."
A green bay-bough for thy world-worn brow,
Calm heart, and sad, and tried;
In death thou liest triumphant now
O'er self and all beside.

What Others are Doing

URIC ACID DECOMPOSED BY RADIUM EMANATION

Mezernicky has verified (*Oester. Chem.-Ztg.*; through *Pharm. Zentralh.*) his claim that radium emanation destroys uric acid; in twelve days, he found, 30 mg. of sodium urate was thus completely changed. Purin bases are influenced in a like manner.

HYPERLEUKOCYTOSIS

In a report to the International Tuberculosis Congress held in Rome, 1912, Julius Citron (*Deut. Med. Woch.*, 1912, No. 20, p. 937), mentions the fact that induction of increased leukocytosis has been employed by various clinicians for the treatment of certain local tuberculous affections and also as an adjunct in the treatment of pulmonary tuberculosis. By this means, certain favorable results have been obtained, it is claimed. Citron refers particularly to Landerer's cinnamic acid (hetol) and to the injection of nucleinic acid, which latter has recently been proposed by various writers.

A PRACTICAL TREATMENT FOR BOILS

"Boldly to incise a furuncle, or common boil, in the making, is certainly to court a train of very disastrous consequences." So remarks Donald Macfarlan in *The Interstate Medical Journal* (for November, 1913, p. 1064).

During this stage, the best treatment, in his opinion, is, to apply an ample and well-warmed bread-and-milk poultice to which a small amount of yeast has been added. This poultice should not be made too warm, since this would kill the yeast. This application, thanks to the presence of the yeast, sharply limits the area of infiltration and brings about the desired pointing. Poultices should be changed thrice daily and continued for several days. In the meantime, the general health should be well cared for.

When the area of abscess formation is well delimited, a crucial incision should be made,

with strokes meeting at the core of the boil. The latter is removed and the contents are thoroughly expressed. After this, the wound is swabbed and syringed out with a potassium and mercuric-iodide solution, 1:2000 in strength. This is easily obtained by dissolving the red iodide of mercury in an aqueous solution of potassium iodide. According to Macfarlan, this is more highly antiseptic and less corrosive than the bichloride of mercury. The solution facilitates healing by first intention. Any subsequent dressings of the boil cavity should be applied on moistened compresses. Do not bandage too tightly.

With this excellent treatment of Dr. Macfarlan's, plus the internal administration of calcium sulphide during the formative stage, and the use of bacterins both to hasten recovery and prevent the occurrence of "crops," we should think this method of treatment satisfactory.

GUAIACOL IN PULMONARY TUBERCULOSIS

Some years ago guaiacol found considerable use in the treatment of pulmonary tuberculosis. For some reason, it has fallen into disrepute, perhaps because, as asserted by G. M. Mayberry (*Brit. Med. Jour.*, Jan., 1914, p. 84), it is not given in large-enough doses, continued for a sufficiently long time, or administered regularly.

Mayberry has employed this drug in a large number of cases, mainly of the bronchial type, and has found that, by increasing his dosage up to 12 minims three times a day and prolonging the period of administration to four months or more, highly satisfactory results are obtained. He always gives it before food, and when so administered has not observed any disturbances of digestion. He reports five cases, in all of which there followed decided gain in weight and improvement in the symptoms.

He administers the drug in the form of a mixture, increasing the dose of guaiacol by 2 minims each week, until a maximum of 12

and 15 is given three times a day. The formula employed is as follows:

Guaiaicol.....	dr. 1
Alcohol.....	oz. 1
Syrup of lemon.....	oz. 1
Spirit of chloroform.....	drs. 2
Water, enough to make.....	ozs. 6

The dose of this mixture is 1-2 ounce (a tablespoonful) three times a day.

A SIMPLE TREATMENT FOR ANAL FISSURE

M. Katzenstein, of Berlin, confidently recommends (*Ther. d. Gegenw.*, Dec., 1913) his rapid nonoperative treatment of anal fissure, as employed by him for some time. He employs a mixture of extract of belladonna, 10 parts; cocaine hydrochloride, 10 parts; ichthyol, 80 parts. The underlying idea is this: the atropine overcomes the irritability of the exposed nerve-endings; the cocaine allays the pain, so that the spastic conditions are relieved; and then the ichthyol favors the healing-process.

A pledget of cotton is rolled into a cord of the diameter of a thick knitting-needle; then, having gently warmed and shaken up the medicament, this cord is saturated with it and then introduced into the anus, placing it at the opposite side of the commissure from where the lesion is located. The medicament gradually will spread to the sore, while direct application would be too painful. This is renewed daily until a cure is effected; but sometimes even the first application ensures marked relief. To obviate occurrence of fresh fissures, it is advised to pass into the sphincter, every day for a while, a good-sized greased bougie (or, probably better, a small rectal dilator).

THIOCOL - GLYCERIN INJECTION IN TUBERCULOUS JOINTS

Radical incision for tuberculous joint disease is not an ideal method of treatment and should be resorted to only when other methods fail, in the opinion of Jacob Heckmann, who, in *The Postgraduate* (Dec., 1913), advises resorting to the injection method; combined, of course, with the orthopedic expedients, such as immobilization, fixation, extension, with plaster-paris casts and various ingenious apparatus. The remedies most frequently used for injection are iodoform-glycerin and formalin-glycerin, the latter brought out by Murphy, of Chicago.

However, the recognized value of creosote in tuberculosis led Doctor Heckmann to the

adoption of thiocol (potassium-guaiaicol-sulphonate) for this purpose. This is a colorless and odorless powder, readily soluble in water and a little less so in glycerin. To make a 10-percent solution, 45 grains of thiocol is added to 1 dram of glycerin and 1 ounce of water and the mixture heated until a clear solution results.

Guaiaicol, which is soluble in glycerin alone, should also be valuable, and Heckmann purposes to use this in future cases. He now uses a 10- to 12-percent solution of the thiocol, made as described, although both weaker and stronger solutions have been employed with good success. About 1 or 2 drams are injected into the joint every eight to fourteen days, with immobilization with a plaster-paris cast. In smaller joints, the cast is opened at every injection; in larger ones, a fenestrum is made for future injections, this being filled with gauze or cotton and bandaged during the interval.

The pain following the injection usually stops after a few minutes, and the after-pain and local irritation is much less severe than with the iodoform and formalin mixtures. If there is pus in the joint, it is aspirated before introducing the thiocol-glycerin. Doctor Heckmann reports five cases treated in this manner.

THE BULGARIAN BACILLUS IN INFANTILE DIARRHEA

Another physician who has been using the Bulgarian bacillus in tablet form in the treatment of infantile gastroenteritis is Louis H. Schwartz, who reports in *The Medical Record* (Jan. 24, 1914, p. 159) 55 cases of infantile diarrhea treated during July and August last, and in which these tablets were used. Inasmuch as the home conditions of these infants were for the most part wretched, the parents being poor, ignorant, and superstitious, the results obtained really were remarkable.

The babies ranged in age from a few weeks to two years. Of these, 16 were breast-fed, 32 were bottle-fed, and 7 were on breast and bottle combined; 47 were in their first year of life. In 33, there was diarrhea, but no vomiting, and in 20 there was both vomiting and diarrhea. The stools generally were green, watery or curdy, foul, slimy, and in a few cases blood-stained. There was fever in 20 cases, the temperature in some cases running as high as 105 degrees. Some of the patients received no treatment other than the ferment tablets, but 17 were given an initial purge of calomel and castor-oil, and were kept

on barley-water alone. However, very few of the infants were actually entirely denied the use of milk. Bismuth in small doses was administered along with the Bulgarian bacillus tablets in 13 cases.

The results obtained were as follows: There were no deaths. Gain in weight was recorded in 43 of the children; 2 lost weight; 3 gained and then lost later; and in 7 there was no change of weight. In nearly every case, the temperature came down to normal within one to three days. Within two or three days after the Bulgarian-bacillus tablets were used, the stools became yellowish or brown, well formed, and free from mucus and blood. The number of stools sometimes decreased, but occasionally remained unchanged. In the latter cases, bismuth subnitrate in tablet form was given in addition to the lactic-acid tablets.

Doctor Schwartz believes that the administration of Bulgarian-bacillus tablets is a distinct advance in the therapeutics of the diarrheas of infants.

THE INTRAVENOUS TREATMENT OF RHEUMATISM

Owing to the gastric irritation caused by sodium salicylate, a number of physicians have suggested the administration of this drug by the intravenous route. The feasibility of this method of giving it was demonstrated by Felix Mendel as long ago as 1904. In two recent papers, one by Lewis A. Conner (*Med. Record*, Feb. 21, 1914, p. 323), the other by Paul M. Patterson (*N. Y. Med. Jour.*, Nov. 1, 1913, p. 870), this parenteral mode of giving the drug is revived. Mendel combined with the sodium salicylate a small amount of caffeine; Conner, however, now gives the salicylate alone, the dose ordinarily administered being from 15 to 20 grains, injected at 8- or 12-hour intervals, and continuing over a period of from three to six days.

According to Connor, the secret of giving the drug successfully, so that there may be no risk of local thrombosis, consists in employing a very small hypodermic needle and in being careful that it has a fine, sharp point. It is also essential that the solution employed be fresh and made from a chemically pure crystalline sodium salicylate. Before administering, the skin over the flexed surface of the elbow is sterilized by painting with tincture of iodine, then, filling a carefully sterilized 10-Cc. all-glass syringe with the solution, each Cc. of which contains 3 grains of sodium salicylate, the injection is made.

The therapeutic effects, of course, are those of sodium salicylate, but the relief of pain secured is more prompt and more permanent than when the drug is administered by the mouth; in some cases, improvement beginning almost immediately.

The principal advantage of this mode of administration is, that there is no troublesome gastric intolerance to contend with, a complication which often makes it impossible to administer the salicylates in sufficient quantities. Also, Connor thinks the method should be tried in patients who show little or no response to the drug, as usually given. Furthermore, the injections seem to have distinct advantages when there are threatening heart complications, and in the treatment of severe rheumatic affections of the eye, because of the more rapid action as well as accurate dosage.

Patterson combines with the sodium salicylate an equal quantity of guaiacol and glycerin, all three being dissolved in distilled water, as in the accompanying formula:

Sodium salicylate,
Guaiacol,
Glycerin, of each Gm. 41.29
Distilled water, enough to make CC. 2000

Of this mixture, 75 Cc. is used, together with 125 Cc. of normal saline solution at a temperature of 100° F. This quantity will contain approximately 23 grains of sodium salicylate. The mixture is allowed to run into the vein slowly, taking from five to ten minutes for completing the infusion.

Occasionally patients complain of dizziness or sleepiness during the administration of this solution, and in one case there was slight delirium just before the full amount had been introduced; but this symptom passed away in ten minutes. Doctor Patterson declares that the guaiacol prevents the vertigo, tinnitus aurium and embarrassed respiration which sometimes occurs when sodium salicylate is used alone; also, the quantity of hemoglobin is actually increased by the use of the guaiacol.

Within thirty minutes to one hour after the injection of the guaiacol-salicylate solution the patient begins to perspire profusely, and this symptom lasts for four to ten hours. The inflammation, swelling and pain all disappear rapidly, a slight stiffness of the joint involved remaining, which usually disappears within from one to three days.

This intravenous method of treatment has been employed by Patterson in the Metropolitan Hospital on Blackwell's Island. He says that the patients treated from the onset of the attack left the hospital in from six to

twelve days, apparently cured. In not a single instance was there failure to secure relief. Fingers which were stiffened become mobile the next day, and within twenty-four hours patients often are asking how soon they can be allowed to be up and about. Patterson believes that this method of treatment is the best we have, not excluding even the vaccines. For prompt relief, he knows of nothing that will equal it.

CONCENTRATED ANTITOXINS VERSUS DILUTE SERUMS

Most of the diphtheria and tetanus antitoxin now used by physicians in this country consists of carefully refined and concentrated pseudo-globulin solutions, most of the protein content of the horse-serum being removed by a process of "salting out" and separation, the pseudo-globulin that carries the required antitoxin being finally redissolved in salt solution. In this way, the resultant antitoxin of commerce can be made to contain 2000 to 3000 units of diphtheria antitoxin per Cc.; with a protein concentration of 18 to 20 percent, while the original immunized horse-serum contained only from 400 to 600 units of antitoxin per Cc., besides a protein content of 8 or 9 percent.

The question has occasionally been raised, as to whether the old-style serum, with its low percentage of protein, might not be absorbed more rapidly than the newer antitoxin with its larger percentage of protein. To settle this question, Park, Famulener, and Banzhaf, of the Research Laboratories of the Department of Health of New York City, have conducted an elaborate series of experiments, both upon the lower animals and upon man; and the result of this work has been published in the March number of *The Journal of Infectious Diseases*.

The first tests, we learn, were made upon goats, nine animals being selected. A part of these goats were given a concentrated (30-percent) globulin solution, others receiving a solution containing only 7 1-2 percent of total solids. Each injection represented 10,000 units of diphtheria antitoxin. Samples of blood were taken from each animal injected, then the antitoxic value of each sample was determined for periods of 18, 36, 48, 72, and 96 hours.

The result of these tests showed but a relatively slight difference between the degree of absorption of the concentrated and the dilute antitoxins. However, during the first period (eighteen hours), the dilute solutions

were absorbed somewhat more completely, there being a difference of approximately 15 percent in their favor. But, this difference gradually diminished, so that in thirty-six hours it amounted to only 5 1-2 percent, and in forty-eight hours to 2.7 percent.

A series of tests was also carried out upon normal men, part of whom received an 18-percent protein solution and part a 9-percent solution, 10,000 units of antitoxin being given at a dose for each.

In these human experiments, it was found that, when the weight of the subject was considered, the degree of absorption was greater in the men who received the concentrated solution than when the dilute solution was administered; thus, the result in this instance was opposite to that obtained with the goats. Careful comparison of each case, however, showed that the rate and degree of absorption were largely independent of the percentage of protein present within the limits used, but rather were dependent upon the individual characteristics of the individual receiving the injection.

The final conclusion of the authors therefore is that the degree of protein concentration as usually employed in the refined and concentrated diphtheria-antitoxin globulin preparation has little or no effect in retarding the absorption of the antitoxin from the tissues. The removal of water, therefore, if not pushed too far, is a justifiable means of lessening the quantity of fluid to be injected. In other words, the report is favorable to the employment of the concentrated antitoxins, which, as now marketed, seem to present very decided advantages over the more bulky serums, with absolutely no counterbalancing disadvantage.

PROPHYLACTIC TYPHOID VACCINATION IN THE FRENCH ARMY

The record of another interesting demonstration of the prophylactic value of anti-typhoid vaccination appears in the *Province Medicale* (Mar. 14, p. 115), which gives a sketch of the experience of Major Lajoanio, of the seventh battalion of chasseurs of the French army. Lajoanio was in charge of the ninth Alpine military group, consisting of a battalion of chasseurs and two batteries of mounted artillery, who were sent to Morocco, in 1912, to take part in that campaign. Immediately upon receipt of orders, vaccination of these men against typhoid fever was begun at the Val-de-Grâce military hospital,

the work being completed during various stages of the journey to their post in El Boroudh.

In all, 1260 men were vaccinated. In spite of the fact that this operation was completed in a hostile country, when the men were fatigued and many of them were attacked, soon after their arrival, by malaria and dysentery, no serious results followed. Not a man was sent to the hospital or compelled to resort to the ambulance service; only 20 of the men were temporarily excused from service.

The soldiers were at once thrown under hard active-service conditions, compelled to take long marches day and night during the three months' campaign, much of the time in camps where the soil and drinking-water were known to be infected with the germs of typhoid fever of a virulent type. The country was infested with flies, and in every respect exceedingly unhealthy.

To give an idea of the conditions, the writer states that in 1912, among the unvaccinated soldiers, there occurred 169 cases of typhoid fever in every thousand. In spite of the unfavorable conditions surrounding the 1260 men in this battalion, after four months' service in Morocco there occurred only two cases of typhoid fever, and these two men had not been vaccinated because they had previously suffered from the disease. Not one of the vaccinated men was attacked.

As illustrating the protective power of this method of treatment, the writer cites the case of an artillery officer who had received the treatment. Shortly after reaching Morocco, his wife, the grandmother, and three children joined him in Casablanca. Of these, only the mother had been immunized. The grandmother had not been vaccinated, and she, shortly after, contracted typhoid fever. One of the children also took the disease and died. The other two were vaccinated immediately, and escaped.

THE TREATMENT OF FRESH WOUNDS

The modern method of dressing a wound is beautifully epitomized in a paper by Arthur E. Hoag, giving the method employed in the surgical clinic of Cornell University Medical School, New York City (see *N. Y. Med. Jour.*, Jan. 17, p. 116).

For convenience, Hoag divides fresh wounds into four classes; namely: incised wounds, lacerated wounds, punctured wounds, and gunshot wounds. In all of these, the first

treatment is, to paint the surrounding skin with tincture of iodine (7 percent), after which the part is shaved dry, since the tincture will not act in the presence of water. Then the iodine is again applied, both in the wound and around it.

When the wound is lacerated, all badly damaged tissues are cut away, since they will slough and cause delay in healing if allowed to remain. If the wound is an incised one, all bleeding points are tied, then any foreign material is sponged out with dry sterile bits of gauze; then any nerves or tendons that have been severed should be sutured together, and, finally, the wound closed without drainage. A dry sterile dressing is next applied. No wet dressing is ever used in this class, with the one exception of alcohol. For suture material, Doctor Hoag prefers sterile horse-hair or subcutaneous catgut on sutures the face, since these leave little scarring.

Lacerated wounds are treated in exactly the same way, as a rule no drainage being required. Drainage may be instituted at any time if there seems to be any infection; the best material is rubber dam, rubber tissue or rubber tubing.

If the wound is a punctured one, it should, of course, be explored to the bottom, after which tincture iodine should be applied in and around the wound, as already directed, and a drain of rubber dam inserted, to keep the wound edges apart. An alcohol dressing is then applied.

Gunshot wounds should never be probed to find out the location of the bullet, since by probing we further damage the tissues and may carry infection into what usually is a sterile wound. Of course, if there is a bleeding vessel, it must be found and tied, or, if a nerve is divided, that must be sutured.

In both punctured wounds and gunshot wounds, Doctor Hoag advises the use of tetanus antitoxin as a matter of routine. As examples of cases in which it is wise to give the antitoxin invariably, he mentions Fourth of July wounds and punctured wounds received around barns or presumptively soiled with street dirt.

THE TREATMENT OF WOUND INFECTIONS

The treatment of wound infections depends, according to Hoag (*N. Y. Med. Jour.*, Jan. 17, p. 117) upon the degree of the infectious process. When there is only a slight exudate, without necrosis, the best treatment is rest, elevation, and dressings with hot alcohol

solutions (50 percent) or with aluminum-acetate or normal-salt solution. He objects to the use of ichthylol and other ointments, and also to bichloride of mercury.

When there is a large amount of exudate and a tendency to necrosis, Doctor Hoag advises an incision, taking in the major portion of the infected area and carried deep enough to reach the seat of the trouble; then carbolic acid, full strength, is swabbed into the wound, not for its antiseptic power, but to hasten the breaking down of the tissues. The phenol application should immediately be followed by one of 95-percent alcohol. The wound is then packed with gauze saturated with Chlumsky's solution (camphor, 60 parts; phenol, 30 parts; alcohol, 10 parts). Over all, he applies a wet dressing consisting of 50-percent alcohol, after which hot-water-bottles may be applied to the parts, to hasten the breaking down of the infected area. As soon as necrosis has occurred and pus formed, the gauze should be removed and treatment instituted as described for the third class of infections.

In this third class there is marked necrosis. If an extremity is affected, then a tourniquet should be applied, to render the part bloodless; then an incision should be carried down through the different layers, care being taken not to open the tendon-sheaths, unless they are involved. This incision should be long enough to reach all the infected area. The pus is now evacuated, the infected area sponged out dry with sterile gauze and Durante's antiseptic solution put into the pus cavity. This solution consists of iodine, 1 part; potassium iodide, 10 parts; guaiacol, 5 parts; glycerin, to make 100 parts.

Of vital importance in these cases is drainage. The material employed should consist of something which will not dam back the pus and will permit of free exit of broken down and infected tissue. Hoag prefers rubber tubing, rubber dam or rubber tissue.

Under no condition should gauze drains be used in these cases, since this material, if applied wet, soon becomes dry or filled with purulent material and adheres to the wound edges and forms a plug, which dams back the pus and keeps it in contact with the wound. Rubber drains will not adhere to the wound edges, and will permit of free drainage. These should be covered with a wet dressing that will take up the infectious material as it exudes from the wound. The best solutions for these wet dressings are: 50-percent alcohol, 1 percent aluminum

acetate, 1-percent sodium citrate, and normal-salt solution.

FLEAS AND THE PLAGUE IN THE BIBLE

When Moses, for the second time, promulgated the laws for the guidance of Israel, he said, should they disobey after possessing the promised land of the heathen Canaanites (Deut. xxviii, 27): "The Lord will smite thee with the botch of Egypt, and with the emerods, and with the scab, and with the itch, whereof thou canst be healed." Then, after the Israelites had established themselves but wickedness became rampant, they lost the protecting ark of the covenant to the Philistines, a people steeped in vices and lecherous practices; but who also had achieved to the Assyrian civilization.

Now, when the Philistines deposited the sacred ark in their temple of Dagon, we are told in I Samuel, v, 6, that "the Lord . . . smote them with emerods," and destroyed those dealing with the ark. In their terror, the Philistines now carried the ark to Gath; whereupon (I Sam. v, 9) the Lord "smote the men of the city . . . and they had emerods in their secret parts." Becoming panic-stricken, the ark at last was returned to the Israelites, because sickness and death followed wherever it rested, and (I Sam. v, 12) "the men that died not were smitten with emerods."

For ten months the ark was among the Philistines, housed in various cities; then, when it was resolved to get rid of this death-dealing prize of war, the priests counseled that they send along with it a "trespass offering" for the god whom they had offended, and advised (I Sam. vi, 4) that this should consist in five golden mice and five golden emerods, saying (I Sam. vi, 5): "Wherefore ye shall make images of your emerods, and images of your mice that mar the land . . . peradventure he will lighten his hand from off you." The ark was then restored at Bethshemesh.

However, the trouble did not end there; for (I Sam. vi, 19) the Lord "smote the men of Bethshemesh, because they had looked into the ark of the Lord, even he smote of the people fifty thousand and three score and ten men."

The foregoing citations from ancient history acquire a certain amount of interest in the light of the recent discoveries about the role played by insects and other creatures of the animal world in the dissemination of diseases of various kind; and the passages

cited from the Old Testament are presented here because of a theory promulgated not long ago by Sir Havelock Charles, as expressed in a British contemporary. It will be observed that the translators have taken over the appellation emerod, the meaning of which had remained a puzzle to Bible students.

Now, however, Sir Havelock Charles comes forward and suggests the ingenious—and withall plausible—idea that emerods signifies fleas. Then he goes on and speculates something like this:

A plague was ravishing the land of the Philistines, and, from the account, we may safely assume that the wise men had learned to associate it with rats and fleas, exactly as we in this late day have discovered for the bubonic plague. The temple of Dagon, like all other habitations (of those countries), was infested with mice and rats (which often are not distinguished) harboring plague-bearing fleas. The ark itself was covered with badger-skin (Exod. xxxvii, 19), consequently would serve to attract and hide numbers of infectious fleas.

Thus, as the ark was carried from city to city, the plague broke out there, culminating in a terrific epidemic when the Jews opened and examined the coffer; this, however, finally dying out when the casket had been put back into the holy of holies, where it stood in seclusion, unmolested. It may, further, be surmised that possibly this plague was new among the Israelites, and, hence, the ravage was more deadly than among the comparatively immunized peoples native to the soil.

AMEBIC DYSENTERY IN NEW YORK

There occur many cases of amebic dysentery in his section of the country, Jerome Wagner declares in *The Medical Record* (Jan. 31, 1914, p. 190), but altogether too many of them are not diagnosed as such. He gives a report of 6 cases which he personally has seen and treated; and he assures his readers that in the New York Polyclinic Hospital they have seen more than 100 cases in the last twelve years. In all of these the diagnosis was made only after the finding of the entamoeba histolytica in the stools.

Doctor Wagner describes the reaction to emetine in these cases as being "marvelous," both as regards results and as to the rapidity of action. The average number of stools in the cases coming under his observation before treatment was instituted was from 12 to 15 a day. On an average, after one and two

thirds days after the initial injection the number of stools dropped to a single one or, at the most, to 2 in twenty-four hours. At the end of a series of 7 injections, the stools numbered but one a day, and have so continued until the present time. In 2 of the cases seen, blood and mucus disappeared within twenty-four hours after the first treatment, while in the third case the stools were free from blood and mucus on the third day after the first dose of emetine hydrochloride. Three days after treatment was begun, the stools usually became normal.

In no case were amebas found after the first twenty-four hours. On an average, it took two days to relieve the patients of tenesmus, and in several cases the patient felt much better after the first injection, there also being decided improvement in the appearance of the rectal mucosa. There was a corresponding improvement in all the symptoms and signs of the disease, including increase of weight, better appetite and better tolerance for food. In no case did the patient vomit following the hypodermic injection of emetine. In 2 cases there were recurrences, but the symptoms were promptly relieved by emetine treatment. Doctor Wagner considers that intermittent after-treatment with emetine probably is necessary.

LAMBIA DYSENTERY, AND ITS CURE WITH EMETINE

An interesting article on dysentery and its treatment with emetine is contributed to a late issue of the *Muenchener Medizinische Wochenschrift* (No. 5, p. 241) by Martin Mayer, who, in the Institute for Tropical Diseases at Hamburg, effected a purely clinical cure, of what he affirms to be a case of lamblia dysentery, by means of one hypodermic dose of emetine hydrochloride.

The patient, a ship's officer of 22 years, had been sick on nearly the entire trip coming from Bombay, passing as many as 12 to 24 liquid stools a day (often mingled with bloody mucus), and confining himself to soups for food. Mayer found that, while there was much tenesmus, the patient felt little pain, except for some gastric cramping; his abdomen was not tympanitic; the descending colon could be traced as a rope of finger-thickness; his temperature stood at 37.2° C. (99° F.).

The microscope revealed the presence in the stools of a multitude of lamblia intestinalis both in the vegetative stage and encysted; also numerous open-spiraled spirochetes.

Amebas were absent. This finding was verified by another expert.

Lamblia intestinalis (cercomonas intestinalis, megastoma entericum) is a flagellate protozoan found in the healthy duodenum and jejunum; it also is encountered in the vagina and lung. This parasite has been suspected of sometimes being a pathogenic factor in enteric disorders of a dysenteric nature, but most writers describe it as harmless. Since such authorities as Grassi and Schewiakoff hold the former view, and these are supported by, e.g., Botine, v. Prowazek (1908), Fairise, and Jannin (1913), Mayer considered the present an excellent opportunity for determining whether emetine is effective in other forms of protozoic dysentery or is elective solely in the amebic variety.

The outcome of the experiment was as striking a success as generally is seen in the case of amebic dysentery. After a second microscopical test, with the same finding, the patient was given (Nov. 17) a hypodermic injection of emetine of 0.05 Gram (gr. 3-4). The account reads that the patient had 8 mucosanguinolent liquid passages "since midnight," so that presumably the drug was administered early in the forenoon. And then we read that he had only one more passage of the same nature, and this one and one-half hours after the injection.

After this sudden improvement, white bread was added to his liquid diet. The next day the patient felt well. Not until the day following (Nov. 19) did he have another passage, and this was firm and but slightly coated with bloody mucus. The latter contained large numbers of dead and disintegrating lamblia cysts, besides a very few spirochetes. The day after this, eggs were added to the diet; but the patient had no passage for again two days (Nov. 21). These feces were hard, and free from lamblia. The temperature still was at 99° F. On the fifth day after the solitary emetine-dose (Nov. 22), there was another passage, part hard, part softish, and the latter was found to contain a few, intact, lamblia cysts.

From the start, the vegetative forms of lamblia had disappeared completely from the feces, and, in view of the almost instantaneous cessation of the diarrhea (followed, in fact, by constipation) as well as the marked general improvement of the patient, no further emetine had been administered. However, in face of a threatening recrudescence, the injections were resumed vigorously, 3-4 of a grain once a day for four successive days. The next passage occurred after two days (No.

24); it was hard and soft, and contained none of the parasites. Then, beginning with November 25, the subject was ordered to leave the bed and revert to a meat-diet. Bowel movements became regular and the man was discharged as "temporarily" cured.

The author expresses the intention somewhat later to subject this man to another course of emetine, so as to preclude a possible relapse; for, says he, fission of the lamblia in their vegetative stage is not known, and more than likely the membrane of the cystic form is dissolved in the intestinal fluids and the parasite again begins functioning. Hence, the importance, clinically, of destroying all cysts present, by means of emetine.

Mayer is convinced that, in spite of assertions to the contrary, flagellate, or lamblia, dysentery is a fact, citing one author, Jannin (named above), who has reported the death of a patient in whom lamblia, present in enormous numbers, had penetrated deeply into the colon-tissues, which exhibited marked dysenteric lesions and an abscess owing to a perforating ulcer. In this case, no other pathogenic microorganisms were discoverable.

The deduction is, that, while lamblia intestinalis may greatly multiply in the presence of other intestinal derangements, this protozoon itself also may engender dysentery.

SEASICKNESS: NATURE AND CAUSAL TREATMENT

Of hypotheses advanced to account for the phenomenon of seasickness there are quite a number, and therapeutics have been formulated to meet the theoretical indications, but no satisfactory solution of the problem has as yet been found. Hence, two articles upon this subject published in the *Muenchener Medizinische Wochenschrift*, claiming advancement in this direction, naturally attract attention.

The first contribution is by J. Fischer, of Bad Nauheim, and he tells his story in the July 29 issue of the journal named. While crossing the Atlantic on a visit to America (in 1912), he recalled certain pharmacologic experiments of his, which had developed the fact that (in sound young men) physostigmine in dosage capable of overstimulating the pneumogastric nerve (3-4 to 1 mg.) will give rise to disturbances simulating seasickness: sialorrhea, nausea, dizziness, headache, pallor, cold sweat, slightly diminished blood pressure, lowered pulse (but sometimes accelerated), irregular respiration, Aschner's phenomenon, and so on.

At once the idea suggested itself that seasickness (and the related states of carsickness and swingsickness) is the expression of an undue stimulation of the pneumogastric nerve, or, more broadly, of the autonomic nervous system; and that this explains the beneficial influence of atropine, which latter exhibits selectively a paralyzing effect upon the former. Fischer goes on to point out how as long as 26 years ago Skinner, and a few years later Girard, employed a combination of atropine and strychnine, with more or less success, on the supposition that the vegetative nervous system somehow is involved in seasickness; and this therapy has become quite a favorite since then.

However, Fischer declares there was but a very vague understanding as to the real role these drugs (atropine and strychnine) play; and not until the more recent researches (Mueller, Langley, Caskell) on the anatomy, physiology, pharmacology, and pathology of the sympathetic system, and particularly the promulgation, by Eppinger and Hess, of the doctrine of vagotonia were we in a position clearly to explain their curative process. We cannot here enter upon Fischer's theory as set forth, but proceed to the practical phase, except for a word as to vagotonia.

This is a term applied by Eppinger and Hess to congenital and acquired undue irritability of the pneumogastric nerve; and, according to them, nervous and hysterical individuals (women preeminently) are vagotonics, as also are the Jews as a class. But, it also is true that such vagotonic individuals are those most subject to seasickness; a fact explaining predisposition to the disorder, as well as occasional attacks in others ordinarily immune. (Temporary indisposition or unusual perturbation of the vessel.) With this in mind, Fischer took notice of all the passengers eventually attacked and fully established the truth of this observation; which, moreover, was fortified by the results of the atropine therapy instituted.

Both his trips were decidedly stormy, and altogether 52 passengers (of all three classes) came under Fischer's treatment. To test his theory, before starting upon the return trip, he subjected all the passengers of one steerage compartment (it was the "Amerika" of the H.-A. Line) to a test for vagotonia, and the notable observation was made that all those in whom he detected irritable pulse, irregular respiration and Aschner's phenomenon (vagus-symptoms) were those who became sick earliest and most severely.

The effect of the atropine injections (dose,

1 mg. in men and 3-4 mg. in women) is described as astounding, as a rule. Soon the symptoms began to subside—although the sea would even grow more turbulent—and within three or four hours generally the patients were completely restored. Mostly a single dose sufficed, and that in some of the most intensely sick and completely prostrated victims. Never more than two injections were required, while none of these experienced a relapse.

In one steerage compartment, 8 very sick persons were given the atropine injections, and 6 of these reappeared on deck next morning, entirely cured; 2 of them were relatively much improved. On the other hand, the seasick in an adjoining compartment did not then get the atropine, and all were as sick the following morning as before.

Fischer emphasizes the complete harmlessness of this atropine dosage under the circumstances. For comparison, he also tested its action given by mouth (30 patients), one or two doses of 20 drops of a 1 : 1000 solution, twelve to twenty-four hours apart. Action was satisfactory, but less prompt and reliable.

Concluding that the results of the atropine therapy demonstrate the correctness of the vagotonia hypothesis for seasickness, Fischer endeavors to explain the effect of the ship's (and of other objects) motion upon the autonomic nervous system by accepting the view that there is induced electively a profound disturbance of "tissue-energetics," a rapid change in "molecular mechanics" of the tissues involved. (Rosenbach, Mueller.)

The other article referred to in the beginning is one by Professor Friedlaender, of Frankfurt a. M. (l. c., 1913, No. 33), who fully agrees with Fischer's ideas. Having devoted much attention to this subject (including some personal experiences), he finds in Fischer's presentation a corroboration of the idea that a visceral and a nervous nautopathia must be distinguished (with, of course, their mixed types); the visceral being the milder and less numerous form. The severer attacks, he points out, are associated with that terrible sensation of annihilation or goneness, exactly as encountered after blows upon the stomach or testes, and in certain diseases, besides that suggestively induced—all based upon disturbances of the autonomic or, broadly, the sympathetic system.

Now, to apply this hypothesis, Friedlaender assumes the to and fro movements of the ship to cause the stomach, besides the viscera, to be thrown this way and that, and this produces a stretching of—a pulling upon—the

esophagus, thus directly and violently affecting the pneumogastric nerve. This assumption not alone explains the benefit derived from keeping a prone position, but furnishes a basis for the claims of a seafaring friend of his, who (contrary to the popular notion) advised keeping the stomach as empty as possible on a stormy sea voyage.

Since that time—years ago—Friedlaender has been advising elevating and fixating the stomach when one fears seasickness; which is a simple matter, and should be done before entering the ship. The subject lies flat on his back, legs drawn up, and then a broad flannel bandage, several yards in length, is wound around the abdomen in one or two tours, beginning at the bottom and gradually forcing the viscus upward, in that manner rendering the gullet more slack. (Bandaging the abdomen or wearing a tight belt are old practices, of course.) This mechanical precaution, in conjunction with a vigorous atropine therapy, Friedlaender considers far more promising than reliance upon nervines and hypnotics.

Friedlaender, in addition, is confident of good resulting from applying the vagotonus doctrine, and the treatment suggested, to other conditions dependent upon irritation of the pneumogastric nerve and the autonomic system, as above alluded to, and he hopes for extended experimentation by seafaring men.

HYPODERMIC PURGATIVES

Our veterinary brethren are using successfully a number of hypodermic purgatives. In human medicine, however, our efforts in that direction have been hesitating and feeble. It is interesting, therefore, to review the work now being done in this field in France and Germany. In the *Gazette des Hôpitaux* for March 10, there is (p. 475) a paper by Brelet, which is an excellent résumé of some of the recent work.

As far back as 1874, we learn, Luton recommended the use of hypodermic injections of magnesium sulphate in the treatment of habitual constipation. Then, a little later, Armaingault used the same remedy by the subcutaneous route, and reported his experience with some 60 patients. In Germany, Fronmueller tried subcutaneous injections of solutions of aloes. However, little more has been done in this field until in quite recent years. Among the remedies considerably employed are, sodium sulphate, magnesium sulphate, senna, buckthorn, cas-

cara, rhubarb, aloes, phenolphthalein, and the peristaltic hormone (hormonal).

Braillon ("Contribution à l'Etude des Injections Hypodermiques Purgatives," 1911-1912) found sodium sulphate effective, but it causes sensitiveness of the skin and even scar formation. Sodium citrate, when injected under the skin, is very painful and, therefore, contraindicated. Magnesium-sulphate injections were tried by Braillon, but not found very effective. Senna infusions (10 percent) were not painful, and in rabbits made the stools softer and more abundant; however, in the case of dogs he obtained no results with this drug. Given to rabbits, rhubarb, cascara, and buckthorn were very similar in action to senna; that is, they produced no real purgation, but considerable change in the consistency and weight (which was increased) of the fecal matter. Aloes is toxic for the rabbit, but harmless to the dog, and decidedly purgative. Phenolphthalein seemed effective in the rabbit, and even more so to the dog.

Especially interesting were the experiments performed by Carnot and Glénard (*Bull. de la Soc. de Biol.*, 1912, Nos. 12 et seq.), upon segments of a rabbit's intestine. These portions of gut were resected, then cannulas were introduced at the ends—for the collection of intestinal liquid—and thus kept in an incubator containing oxygenated Ringer-Locke solution at 39° C. In this way, the life of the intestinal segment may be continued and after several hours still will present some slight peristaltic movement. Now introducing into the arteries and mesenteric veins of this segment Ringer-Locke solution containing the purgative it is desired to test, it is possible to determine its action upon peristalsis and intestinal secretion.

The authors named found that, under these circumstances, sodium sulphate increases intestinal peristalsis very decidedly, but it does not influence intestinal secretion. The action of magnesium sulphate, however, is almost the reverse of that of the sodium salt, arresting peristalsis and causing marked relaxation of the intestine, which becomes quite flaccid and fills up rapidly with "liquid of transudation." Aloes decidedly increases peristalsis and dilates the mesenteric vessels. Phenolphthalein both increases peristalsis and the quantity of intestinal secretion.

Carnot concludes that there are certain distinct indications and contraindications for the hypodermic use of these remedies. For instance, the first indication is present when, for any reason, the digestive tract is intolerant,

as in the case of excessive vomiting, lead colic or coma. In other cases, direct contact of the purgative with a digestive lesion may be harmful, as, for instance, in ulcer of the stomach or some gastrointestinal neoplasm.

Still another advantage presented by the subcutaneous route is, the decided reduction in the dose required. And, finally, when given hypodermically, the purgative often continues to act for several days; a fact of considerable advantage in cases of rebellious constipation, especially if the digestive canal has already been exhausted by the continuous employment of various laxatives.

There are also special indications for the different remedies cited. For instance, in cases of spasmodic constipation, where there is contracture of the intestine, the use of sodium sulphate would be contraindicated, while the magnesium sulphate not only relieves the spasm, but also has a purgative effect. On the other hand, where there is an atonic and flaccid condition of the bowel, remedies which incite contraction of the intestine, such as sodium sulphate, senna, cascara, and hormonal, might be indicated.

Where the large intestine is principally affected, the writer suggests the use of senna and sodium sulphate, which seem to exert a part of their action upon this portion of the bowel. The peristaltic hormone, rhubarb, and cascara, on the contrary, seem to act more particularly on the small intestine. Upon the human subject, aloes seems to have a slightly toxic action, causing pain at the site of injection and sometimes chilliness and colic. Senna seems to give fair results, without any deleterious local or general reaction.

Most experiments, however, have been made with magnesium sulphate. This, apparently, has been given to patients in doses of 25 decigrams (4 grains). Robin and Sourdel (*Soc. Med. d'Hôpit. de Paris*, June 14, 1912) used a sterile 25-percent solution, 1 Cc. being the ordinary dose, and this repeated every day. After the first two injections, the result obtained was not a purgative one, but, rather, evacuant, and this rarely accompanied by diarrhea. Sometimes no action resulted until after these injections had been repeated for several days.

Gaillard quotes 46 observations in which magnesium sulphate was used upon human subjects in the way just described. These injections were absolutely harmless and found effective in about two-thirds of the cases, evacuation occurring on an average of seven or eight hours after injection. Carnot employed a 1-percent and a 10-percent solution

of sulphate of magnesium, injecting of the first from 2 to 20 Cc., of the latter, 1 to 3 Cc., according to the results desired.

The conclusion of Brelet is that the purgative action, when the hypodermic route is employed, is characterized by mildness and prolongation, and this result is obtained quite independent of the size of the dose; for, when the doses are doubled, tripled or quadrupled, the results following are not proportionate. He agrees with Carnot, that purgatives given in this way are less constant in their action than when the drug is given as ordinarily, by mouth.

MEDICAL TREATMENT OF APPENDICITIS

Dr. Beverly Robinson, of New York City, has favored us with a personal letter and, with it, enclosed some reprints regarding appendicitis. He assures us that he has read and enjoyed Dr. R. L. Vioran's paper in the March number of *CLINICAL MEDICINE*, with many statements of which, it seems, he is in accord, and says: "I feel convinced that in a very few years from the present time an operation for appendicitis will be extremely rare; we shall have gained real wisdom and shall guide our patients with united advice to seek the best means of prevention and cure."

In an article upon "The Medical Treatment of Appendicitis," published in *The Medical Record*, March 22, 1913, Doctor Robinson has outlined a method of treatment, which consists in the following measures: Rest in bed; enemas consisting of egg emulsion of olive-oil, a pint to a quart to be given each time; the enema to be repeated if there is much griping or increased pain. Locally, applications of warm flannels rung out of a mixture of alcohol, 1 part, and warm water, 3 parts, and covered with rubber tissue. Codeine tablets, 1-10 grain, are given every two hours until the pain is notably less. Cracked ice and brandy are given for nausea and weakness. Operation is absolutely forbidden unless a good surgeon is present and the conditions for operation are favorable. In the vast majority of cases, Doctor Robinson declares, a cure will be established within a few days.

From a paper upon "Obsessions in Medicine," also contributed by Doctor Robinson to *The Medical Record*, we quote the following portion:

"Immediate operations for appendicitis are now urged at home and abroad, and by

very many of the best surgeons and physicians. I protest against any such rule of practice, because I believe it to be woefully wrong. I have watched the trend of practice for many years and have been a frequenter of the deadhouse in large hospitals. Of course, patients did die, and would die, because of general peritonitis due to perforation, who, if managed sanely and by the old-time practitioner, would recover.

"I do not affirm that the cure in bad cases (and by these I mean perforation and general peritonitis or, indeed, where it is shut off and limited by adhesions, would be as rapid if it occurred, but I do mean to affirm it would be quite as safe and sure. I am quite aware that this statement, if considered and answered, will meet a storm of contrary judgment, but I state my belief, all the same, unwaveringly.

"One method used nowadays before operation I deplore, and that is the use of the ice-bag. It may diminish pain, but little more than alcoholic applications locally and codeine internally; and, surely, to my mind, it prevents the reestablishment of circulation in the appendix and adjacent colon, which is usually implicated in the disease.

"I still believe—and despite all manner of invective against purgatives in threatened or declared appendicitis—that a dose of castor-oil rarely does harm. The amount of increased peristalsis caused by it may, indeed, occasionally determine a rupture of the appendix a little sooner than it would otherwise occur, but in the majority of cases it will help prevent an unnecessary operation. However, in order to avoid the minimum additional risk of which I speak, and out of regard for a widespread obsession, as I believe, I should be content, very frequently, with large and repeated oily enemata."

ANTITYPHOID VACCINATION IN FRANCE

At the February 10 meeting of the Academy of Medicine (*Gaz. des Hôp.*, Feb. 12, 1914, p. 282), Vidal reported some results with antityphoid vaccination in a garrison which in 1912 suffered from a terrible epidemic, in which 225 in 1000 nonvaccinated people suffered from the disease and 32 succumbed. He vaccinated, without any special incident resulting, the older soldiers who were not yet immunized and the young soldiers but recently enlisted. His confrères at Avignon had followed the same practice. All told,

2420 men were vaccinated, these representing 9000 inoculations.

The local reaction amounted to practically nothing; only two men in the 58th infantry complained seriously, and no person was sick enough to require admission to the infirmary or hospital as a result of the inoculations.

The prophylactic results have been as follows: There was not, in 1913, a single case of typhoid fever among the troops in the garrison. Such a result has never occurred before. From 1892 to 1912, inclusive, there had been 1263 cases of typhoid fever and 118 deaths from this cause at this garrison. The number of days of treatment have been, all told, 44,133. In 1913, all these figures have been reduced to zero. Besides these, 400 nonenlisted persons who received the vaccine treatment also have enjoyed complete immunity.

See also the article on page 424, this issue, giving further experience of a like character.

THE FEEDING OF TUBERCULOUS CHILDREN

According to Prof. A. Czerny (Berlin), the fact that the tuberculous process spreads more readily than in older children and in adults stands in relation to the greater content of water in the organism of the infant and young child, the latter condition due to the almost exclusive feeding with milk and carbohydrates. In feeding tuberculous children, the excessive gain in water, on the part of the tissues, must be avoided, since any great increase in weight may merely represent water, and therefore be useless. The diet should be mixed, and milk should not predominate. For an increase in fat, Professor Czerny advocates the old-fashioned codliver-oil.

In this connection, interest attaches to some experiments on which Enoch Muller, an assistant of Czerny, recently reported and which were undertaken at Czerny's desire. Some rabbits were fed exclusively with carbohydrates, this producing a great gain in weight, mostly due to water in the tissues; other rabbits were fed with fatty substances, which led to an increase in weight by which the specific gravity of the tissues also was increased. When both groups of animals were infected alike with tubercle bacilli, the carbohydrate-rabbits developed a rapidly progressive tuberculosis, while the process was slow in the fat-rabbits.

Miscellaneous Articles

The Nelson Amendments to the Harrison Antinarcotic Bill: What the Profession Thinks About Them

FROM all directions we are getting the news that physicians, all over the United States, have been aroused by the attempt to force into the Harrison Antinarcotic Bill, during what appeared to be its last week on the calendar before final consideration by the U. S. Senate, certain amendments (introduced by Senator Knute Nelson) which would practically debar physicians from dispensing the narcotic drugs, and which would require the keeping of burdensome and unnecessary records of any remedies of this kind which might be administered.

A number of medical societies have already memorialized Congress in regard to these amendments, and we believe that a great many physicians have written or telegraphed personally to their representatives and senators. What the medical profession here in Chicago thinks about the Nelson amendments is very clearly shown by the resolutions introduced and passed at the regular meeting of the Chicago Medical Society upon the evening of April 1. These resolutions are as follows:

"WHEREAS, House Bill No. 6282, otherwise known as the Harrison Antinarcotic Bill, has passed the House and is in the Senate at Washington, and

"WHEREAS, Said bill as passed by the House was satisfactory to the profession, and

"WHEREAS, An amendment has been offered by Senator Knute Nelson of Minnesota practically prohibiting physicians, dentists and veterinarians from dispensing or distributing narcotic drugs to patients by substituting the word 'administration' for the words 'dispensing and distributing' in said bill, and

"WHEREAS, Such amendment would prevent physicians from sending, by messenger or otherwise, remedies for immediate relief when unable personally to attend a patient on the instant, and

"WHEREAS, Such restriction upon the efficiency of physicians tends to limit their usefulness to the people, and

"WHEREAS, The amendment in question is evidently offered purely in the interest of dispensing

druggists to the detriment of good medical service to the people; and

"WHEREAS, The record-keeping feature, also suggested by Senator Nelson, is unnecessary and therefore a needless burden to the profession;

"THEREFORE, BE IT RESOLVED, By the Chicago Medical Society, that the Nelson amendments should be defeated in the interest of public welfare, and be it further

"RESOLVED, That a copy of these resolutions be published in the Chicago Medical Society Bulletin and that a copy be sent to each United States Senator and the members of Congress from Illinois.

J. V. FOWLER, *Chairman*,
C. J. WHALEN,
E. M. WEBSTER,
Public Relations Committee."

These resolutions were sent with a letter to each senator and representative from Illinois, and from the official *Bulletin of the Chicago Medical Society* we learn that replies have already been received from fourteen Illinois congressmen and from at least one of the senators. In commenting upon this matter, the *Bulletin* expresses itself as follows:

"The medical profession must look with great satisfaction upon this step in the right direction taken by the Federal Government.

"No effort is too drastic, when the end in view is the curtailment of the traffic in human suffering and depravity, resulting from the habitual use of narcotics.

"It seems that House Bill No. 6282, which was entirely satisfactory, has received the attention of our friends, the druggists, after its second reading in the Senate, by an amendment introduced by Knute Nelson, senator from Minnesota.

"This is inferred from an article which appeared in the *Journal of the N. A. R. D.*, March 26th, page 1, 451:

"It is suggested that it (H. R. 6282) be amended to take from physicians, dentists and veterinary surgeons the right of dispensing or distributing the drugs enumerated in the bill by giving them the right only to administer them."

"If it is true that the National Druggists' Association is behind this proposed amendment, we can only say that it is a shame that an organization of high-minded men has allowed a sordid business

trick to interrupt, in any manner, the peaceful course of an effort by the federal government to control the sale of narcotics.

"If this is an attempt to prevent the dispensing of drugs by the physicians, it is an ill chosen time and occasion, because the passage of the Nelson amendment by the Senate will cause unnecessary suffering by the public, not by the physician.

"Substitute the word 'administration' for 'dispensing or distribution,' in the bill and you will appreciate what the much discussed Knute Nelson amendment means to a patient, needing a narcotic, when the physician called cannot respond at once, though able to send the medication by a trusted messenger."

Elsewhere in the same number of *The Bulletin*, the following comment is printed:

"Should this amendment be adopted the result would be serious, either in making of the physician a law breaker, or, if he obeys the law, reducing his equipment to a point where his services would be only partially effective.

"If physicians are deprived of their right of leaving a narcotic, Dover's powders, morphine or anything else of like nature to be given by the nurse or taken by the patient, the public will suffer needlessly.

"Our Public Relations Committee is to be highly congratulated upon discovering this surreptitious effort on the part of the druggists to further their propaganda of "No dispensing by the physician," in time for organized medicine to make an attempt to block the play."

We wish we had space to reproduce in full the fine editorial upon this topic published in the April number of *The Illinois Medical Journal*, organ of the State Society. However, the editor of the *Journal* sums up his opinion of the Nelson amendments in the following language:

"It is difficult to speak in moderation of such an attack on the immemorial privilege of the profession to give to patients personally or otherwise, when necessary, such remedies as are necessary for the immediate relief of pain or other severe symptoms, when the physician cannot attend on the instant. The matter of keeping a record, if construed as it evidently could be, to include a careful record of every dose sent or administered, would be irksome, but might be endured by the profession if necessary to overcome some great and urgent evil. But the prospect of keeping such records will not be relished even by men doing an office business, and for the great mass of the profession engaged in family practice it would mean an almost impossible hardship. The word 'administration' in the Nelson amendment can clearly be held to forbid all giving of medicines except on personal attendance.

"The provision of the bill requiring that the physician must be specially employed to prescribe for the particular patient might be construed to prohibit the giving of immediate relief in cases of accident, as in railroad wrecks, where the physician might be present.

"The animus of Senator Nelson's amendment can be inferred from an article in *The Journal of the N. A. R. D.*, which, on March 26th, in a communication, made the following statement: 'It is suggested that it (H. R. 6282) be amended to take from

physicians, dentists and veterinary surgeons the right of dispensing or distributing the drugs enumerated in the bill by giving them the right of *administering*.' This suggestion smells so strongly of the Nelson amendment that it may fairly be assumed that the National Association of Retail Druggists is back of the bill. It seems quite evident that the Druggists' Association is attempting to limit physicians to prescribing. Another joker exempts patents and proprietaries through a skillful juggling of the requirements of the Pure Food Law in the matter of stating on the label the amount of drugs contained.

"It is up to the medical profession to make their desires known instantly by communicating with their senators and representatives in Congress, that the Nelson amendment may be killed. The bill, as passed by the House, may be accepted as satisfactory, although it reaches the limit of endurance in the matter of supervision by the government. Representative M. D. Foster is a member of the House Committee which introduced the bill, and is a physician. Senator Gallinger of New Hampshire is also a physician, and possibly a united protest made to any of these gentlemen would save the profession from a disastrous experience and our patients from unrelieved pain and suffering."

We have no doubt that the medical profession elsewhere in the United States has been equally active in its opposition to this unfortunate series of amendments. The condition was an emergency one, demanding immediate action, and we are proud to be able to say that when this emergency actually presented itself the medical profession was quick to respond in defense of its rights. We are sure that every physician hopes that the Harrison Bill may become a law, and every man should use all the effort he can to effect that result, demanding, however, that it shall not be saddled with any amendment designed to build up another profession at the expense of our own.

At the present time there is a perfect epidemic of legislation affecting the interests of the physician and the drug trade. Some of it is good, much of it is meddlesome, and not a little absolutely dangerous and disastrous. We may expect that next year, when more than forty of our state legislatures will be in session, we shall have dozens of these bills to deal with, and it is essential that the profession should realize this fact and be prepared for what will surely be attempted. The right and reasonable method of getting needed legislation is for all those interested to get together upon a sane give-and-take basis, without any thought on the part of anyone—any class or any profession—of trying to obtain financial benefit through hurting somebody else. We want clean legislation, of a constructive character, made by men whose main interest is the larger interest of the public and humanity.

The present duty, however, is to oppose these iniquitous amendments.

SILVER-NITRATE TREATMENT OF TONSILLITIS

Having read Dr. C. W. Canan's interesting article in the March issue of *CLINICAL MEDICINE* (p. 264) on a severe and stubborn case of tonsillitis, I wish to tell of some of my own experiences with various cases of tonsillitis and the treatment adopted, since he requests expressions from the brothers who might be interested. I will premise that out of the goodly number of cases of tonsillitis, some of them quite severe, only one necessitated resort to the bistoury and only one ruptured spontaneously. All my other cases responded nicely to the regular routine treatment, which I will proceed to outline.

The various cases, quite naturally, presented different symptoms and different phases, still, my treatment varied only in degree, and not in principle. So far as dietetic management was concerned, no special attention was paid to that, excepting in the two cases which developed into quinsy, as before mentioned. These latter patients had to confine themselves to liquid diet, but this as a matter of physical necessity rather than of choice. The other patients were permitted to eat whatever their appetites craved.

In many of these cases the patients developed a severe and prolonged rise in temperature, averaging about 100° to 101° F., with pulse correspondingly fast, and weaker than normal. Appetite, as a rule, was not very good, while the odor of the breath varied with the amount of debris in the buccal cavity and the condition of the intestinal tract as a whole. Pain was almost always a constant symptom and especially marked during deglutition.

Having arrived at a diagnosis with elimination of all possible suspicion of diphtheria, the next step was, to cauterize the surface of the tonsils with 60 percent solution of silver nitrate, the action of which was to form the albuminate of silver with the pathogenic bacteria on and in the tonsils. From a chemical standpoint, some possibly may doubt the accomplishment of such a beautiful reaction, nevertheless, from a clinical and therapeutic standpoint, there does occur a profound reaction, and not a painful, one either. The application of this silver-solution, provided the technic is followed care-

fully, is not even disagreeable, while the patient feels much relieved in a few minutes.

Technic: Using a long probe (either wooden or metal), wrap a small amount of absorbent cotton around the end, in the usual manner, saturate this cotton by dipping it into the solution of silver nitrate (60 percent), then press out all excessive fluid by means of a squeezer of cotton, so that there will be absolutely no excess fluid in the swab. Thus ready and prepared, expose the tonsils by depressing the patient's tongue, and then proceed to swab the tonsils over their entire surface, being particular to enter the diseased crypts and follicles, if these can be reached.

Caution: Great care must be exercised that no excess silver-nitrate solution oozing from the swab drops into the throat, lest serious results might follow; for, as we know, cases are on record in which edema of the glottis, severe spasm of the larynx, and other spastic affections of the throat, even suffocation, resulted from such accidents.

If the patient gags and coughs, the physician should avoid the spray from the mouth of the patient, for the silver nitrate contained in it may unpleasantly stain his hands with little black specks; but worse, this same small amount of silver nitrate sprayed into one's eye would cause serious trouble because of its great concentration.

If there happens to be in the throat any filmy membrane that can be removed with a swab, be sure to do so before applying the silver solution in order that you can apply the chemical directly to the tonsillar tissues. If you happen to touch up the tongue while making the application, and it is uncomfortable for the patient a quick swabbing with a cotton wad dipped in alcohol will immediately relieve it—and by some patients may be relished so greatly even as to endanger the life of the swab.

Usually one or two of these caustic applications in the early stages of an acute tonsillitis will suffice to shrink up the tonsillar tissues and remove the probability of recrudescence of the inflammation and other symptoms. It is interesting to note that, just as soon as those who are regularly subjected to recurrent attacks of sore throat discover that they can have the attack aborted by one or two trips to your office, you will find them constantly on the alert, quick to make that trip, before the painful trouble can make any progress.

A number of persons who were subject to these attacks anywhere from two weeks to a month, and these often followed by attacks

of rheumatism, and had been treated by other physicians in other localities, have assured me that the silver-nitrate cautery is the most efficient and quickest-acting treatment they ever have been subjected to.

In the event that the soft palate is inflamed and edematous, the swab will remedy that also in almost every instance and without any discomfiture to the patient. Tincture of iodine painted *externally* over the tonsillar area oftentimes will afford some relief if used in conjunction with the other treatment; and has a good psychic effect upon the patient.

In conjunction with this cautery treatment, I usually prescribe for internal use the following powders:

Acetphenetidin. Gm. 0.5
Acidi acetylsalicylici. Gm. 5.0
Caffeinae citratis. Gm. 0.5
Divide in chartulas No. 15

Sig.: One every four hours with half a glass of water.

When these powders have been taken, I prescribe sodium salicylate, 5 grains three times a day, for about thirty or forty doses. In consequence, during my entire practice I have not had one case of rheumatism following tonsillitis. Some of the patients who were treated previously by other methods told me that they expected to have an attack of rheumatism after they were through with the tonsillitis, but, luckily for me, they were all disappointed—and I like to think that some of this luck is due to the treatment. (Did I hear somebody say "exaggerated ego"?)

As a laxative and antipyretic combined, I have been using, with excellent results, effervescent magnesium sulphate.

After the acute attack has subsided, general tonics are given. For example: Elixir ferri, quinae et strychninae, Gm. 120.0. Dose: 1 ounce in water three times daily, half an hour before meals. Or this:

Elixir. ferri, quinae et strychninae. Gm. 120
Elixir. lactopeptini, q.s. ad. Gm. 180

Directions: Take 1 ounce in water three times daily, half an hour before meals.

As a farewell, I tell the patient that, in the event of anything looking like a recurrence, he must not wait until the disease has progressed to the abscess-stage, but should have the cautery administered as an abortive measure as early as possible. For, if these glands are cauterized in the initial stage of inflammation, it is no trick at all to abort the condition, which is so troublesome once it is fully developed.

F. J. PORT.

Milbank, S. D. —

[May I rise to suggest one other remedy—

our old favorite, calcium sulphide. When there are signs of beginning inflammation, with pus formation, we know of nothing that goes to the seat of the trouble more energetically than this highly scented yet potent drug. It may well be used in association with the sodium-salicylate treatment which Doctor Port recommends so highly. Nuclein is of value in these cases, so is iodized calcium, so indeed is the through course of bowel elimination which the doctor suggests. Indeed, I am inclined to think that no single expedient is of greater importance than the thorough cleansing of the alimentary canal.

The local medication applied in "sore throats" is too often valueless. Doctor Port goes at things with a commendable energy and thoroughness that must appeal to every thoroughly live clinician. The strong silver-nitrate solution is no doubt efficient, and so is painting the tonsillar surface with iodine tinctures of varying strength. It would be interesting to learn the favorite topical applications of our readers. When thinking of *external* dressings do not forget concentrated magnesium-sulphate solution compresses. Don't scoff—try them.

Finally, remember that a chronically infected tonsil may profoundly depress the general health. It is the port of entry for organisms that cause rheumatism; it is responsible for many an obscure case of chronic arthritis. Some "wonderful cures" of various obscure conditions are effected through its removal; and bacterin treatment, using tonsillar bacterial cultures as a basis, has been found effective in numerous instances.—Ed.]

TYPHOID FEVER AND TONSILLITIS: A SUGGESTION FOR EACH

I wish to call especially attention to Dr. J. M. French's article on the "Treatment of Typhoid Fever," published in the March number of CLINICAL MEDICINE, and also to Dr. C. W. Canan's letter headed "An Obstinate Case of Tonsillitis." Both are good, but in each case treatment could be improved, I think, if galactenzyme tablets were added; for, in typhoid fever, the Bulgarian ferment is a remedy without a peer, while, in tonsillitis, used both as a spray and internally, I regard it as an essential.

If we would use more of a reliable preparation of the Bulgarian lactic-acid bacillus, we should shorten even bad cases of typhoid fever to two weeks' duration, and a tonsillitis

month and sometimes oftener; the family having kept an account until she passed the fortieth outbreak, when they gave up count. The woman had been attended by every physician within reach, but the attacks kept recurring.

I was a new man there, while these people had moved close by, so, I suppose, they thought they would let me take my turn. I decided to try antistreptococcic serum, and injected 10 Cc. of it, and in twenty-four hours administered a like dose. This simple treatment caused prompt subsidence of all the symptoms. There has been no recurrence of the trouble within, now, eight months.

I have been using antityphoid vaccine with uniformly good results, also.

WM. E. MARTIN.

Roslyn, Ind.

[Doctor, please tell us whether prior to your antitoxin experience, just described, you have ever had administered to you a dose of serum of any kind; if so, how long ago? You had serum sickness, of course; and we are anxious to know if the trouble was true anaphylaxis.

Why do not more physicians use antistreptococcus serum? It is an emergency remedy which every doctor should have constantly on hand for cases of erysipelas, puerperal fever, and "blood poisoning."—Ed.]

CHROMIUM SULPHATE IN ALL DISEASES REFERABLE TO THE NERVOUS SYSTEM

Chromium sulphate has given excellent account of itself in the treatment of nervous disorders and their complication. About its chemistry and specific therapeutic action, I have as yet found nothing in my reading; but from practical application three factors stand out preeminently; namely: (1) It has brought about favorable changes in all diseases of nervous origin and in some a complete cure; (2) in doses of 8 grains three times a day after meals and at bedtime, it has proved dosage enough, yet, not too much; (3) its prolonged administration in goodly dosage had no bad effects, with the exception of a slight vertigo and a slight tendency to constipation.

However, the results are not prompt, usually a week or more elapsing before symptoms begin to abate; therefore, when loss of time means loss of confidence in the physician, it is well to add nervine (Vaugh)

2 tablets three times a day, or hyoscyamine sulphate, 1/500 grain three times daily, or compound bromides, 25 to 30 grains, according to severity of symptoms; omitting these when the chromium sulphate has begun its work. I have found it best to give the patient several hundred tablets at each prescription filling and inform him about the slowness of its action, but that he may expect relief in due time.

The cleanup treatment is most essential in all cases when chromium sulphate is applicable, as there almost always are symptoms of faulty hepatic metabolism, with indigestion and constipation.

It would be well if some of the readers of CLINICAL MEDICINE would give us their experience with this drug, in order that the remarkable results could be explained.

I will cite a few cases in which good results were obtained. The first is somewhat lengthy, to convey the gravity of the condition, the others are merely alluded to.

Case 1. Farmer, age 40, single, previously a man of remarkable prowess and good health. In the fall of 1912, while engaged in a stooping occupation of a few weeks' duration, this man suffered a "catch" in the back, located to the right of the middorsal spine. Faradism, vibration, massage were of no avail; liniments and analgesics helped but temporarily. The first six months were spent in seeking relief, from numerous suggestion-theraputists, quacks, and regular physicians, but he lost strength, confidence, and complained of various nervous symptoms. A brother, some years before, a man of sound physique, had died suddenly, which impressed this patient to expect a similar end. Although I was the nearest physician, my services were always avoided, until July 5, 1913, when I was called to his home.

The patient had been in bed a week or more, being too much exhausted to help himself; complained of severe basilar headache, pain in the lumbar spine, hot and cold flashes, insomnia, afraid to fall asleep because of self-destructive dreams, each day would have a severe weakening spell followed by some relief, numbness in the hands, and a marked girdle-sensation over the waist-line. Bowels were constipated, urine tests were negative.

As the man feared immediate dissolution and had visions of self-destruction, I ordered a close watch, and prescribed hyoscyamine to effect, with bromides as alterative.

The diagnosis, in consultation with another physician, was neurasthenia, and here I was,

trying to cure a patient, when dozens of others had failed.

Three weeks of a cleanout, cleanup, and keep-clean regimen, with tonics and nerve sedatives, and daily visits on my part, made it possible for the patient to get out of bed; but each day would start in with a new symptom, until I had a "shotgun" disease on my hands.

Then, one day, the legend, "Chromium sulphate in neurasthenia," met my gaze, and, for lack of something else, I gave my man chromium sulphate, 8 grains after meals and at bedtime. To my surprise and gratification, slowly but surely one symptom after the other vanished. Then the patient was given a liberal supply of tablets of this drug and Hinkle's tablets, and made no more visits, although keeping in touch with him. In four months he had lost all symptoms but one, namely, an "aversion to coming to town or being in a crowd." The first of March, though, I met him in a big crowd, and as sound and healthy as he had been in former times.

Case 2. Married woman, age 30, complained of basilar headache, lumbar sacral pains of years' standing, great nervousness, and being high-tempered. All symptoms were aggravated by overwork and aroused emotions. Ordinary medicaments proved of no avail. Then chromium sulphate, 8 grains after meals and at bedtime, with a saline laxative in the morning, was given, followed by marked amelioration of symptoms. The drug is still being taken in the same dosage, without return of symptoms or ill-effects.

Case 3. Married woman, aged 40, nervous wreck. She kept a pill for every ailment—kidney-pill, stomach-pill, headache-pill, nerve-pill, and heart-pill. Chromium sulphate has eliminated the revenue from most of them.

Case 4. Man of 49 years, single, doing clerical work. Symptoms: "Brain-fag," insomnia, nervous exhaustion, spermatorrhea. These symptoms were ameliorated by similar treatment with this drug.

Case 5. Male student, age 17. Complained of nervous spells and marked twitchings of the eyelids—diagnosed by a specialist as of nervous origin. Four weeks of similar treatment relieved the symptoms.

These and similar results have been attained in all nervous cases by the use of chromium sulphate and the cleanup treatment. If others will try this and report in some subsequent issue of the *CLINICAL MEDICINE*, and the editor will tell us of its definite therapeutic action, we may be able

to place chromium sulphate on the list of our dependable drugs. But be patient, as this drug acts as the tortoise moves, slowly but surely.

ROBERT HURKA.

Verdon, Neb.

[We wish we could tell Doctor Hurka just how chromium sulphate acts, but we are frank to confess that we can not. It was introduced to American physicians some two or three years ago by Kolipinski, of Washington, who reported quite remarkable results following its use in locomotor ataxia, enlarged prostate, neurasthenia, and in a number of other conditions. It is not a "sure cure" for any of these diseases, and in locomotor ataxia it certainly has proven disappointing; but many cases of prostatic disease have responded very favorably to its use—although it often fails. Some of the reports of improvement (even of apparent cure) in prostatic enlargement are quite remarkable, certainly warranting a thorough trial of the drug. Doctor Hurka's report of experience in neurasthenia is typical of a number of the kind we have seen. We wish many others would report. By the way, what do our readers think of the drug as a remedy for male impotence? No two men seem to agree to its usefulness in this condition, but apparently it does *something*.—Ed.]

TWO OLD BUT GOOD REMEDIES FOR TUBERCULOSIS

Allow me to call the attention of any physician who is treating localized external tuberculosis to two old, reliable remedies that have given me such marked results when all other remedies, even surgery, had failed and the patients seemed doomed.

These remedies are iodine and beechwood creosote. Both these remedies have acknowledged therapeutic qualities in this disease, when taken internally, but I am now directing their use locally.

Both of these remedies have caustic, or destructive, local effects; but, notwithstanding this, they are just the remedies we need and will show less desquamation, owing to the resulting discharge, which neutralizes the caustic effects in tuberculous pus cases. I have treated several cases of tuberculous abscesses, necrosis of bone, with tincture of iodine and beechwood creosote, in equal parts, after surgery had failed to benefit the patients permanently, and with prompt results. Here is an illustration:

A workingman, 32 years old, who never before had been injured, complained of a pain in his left side above the nipple, and was treated for pleurisy, although the only physical sign was the pain. Upon careful examination I found, deeply seated, a pus-cavity, from which I removed 12 ounces of a foul dirty pus and then inserted a rubber drainage-tube, three inches, between the second and third costal cartilage. Later I found the third and fourth ribs to be necrosed for three inches and extending over to the sternum. A prominent surgeon removed all the diseased bone, which afforded temporary relief; but in a short time the axillary glands were effected and the disease extended farther along the ribs and deeper into the breastbone. A second operation removed the diseased tissue and bone, but with no better results, and it was apparent that he was doomed unless some other means could be found.

The patient was losing flesh, could not sleep, and had hectic flushes. All hygienic means—air, food, and tonics failed to improve him. At this juncture, I began saturating the cavities and covering the raw surface and skin with tincture of iodine and beechwood creosote, and this almost immediately caused improvement. The discharge lessened, granulations started, the surface took on a healthy appearance, and the men gained 25 pounds in eight weeks.

I could go on with other similar cases, but it is not necessary to consume space. I am not claiming any originality, but, trust that my results may be the means of calling the attention of some brother to the use of these remedies in similar cases and thus be the means of saving precious lives.

H. J. NEELEY.

Butler, Pa.

HOW I TREAT INTERTRIGO

How often cannot the busy doctor call to mind troublesome and painful cases of intertrigo, especially among infants wearing diapers. I myself have seen some cases horrible to look at, the parts covered with the diaper being so badly eroded that the skin was just ready to bleed.

My treatment of this trouble is simple and easy, and even when of the very worst kind I relieve the sufferers at once. I usually direct bathing the parts with tepid water and baking-soda. After bathing the parts well, I gently dry with absorbent cotton. I also order, to be put up in a sprinkling-top box, 2 drams of talcum powder (or Mennen's

toilet talcum) and 3 drams of the compound stearate of zinc powder. The sore parts are covered with this powder after each movement of the child's bowels, then thin layers of absorbent cotton are placed between the folds of the skin.

In treating adults, the same method is followed, except that the powder is not applied as often as in the case of a child.

If any reader of CLINICAL MEDICINE has such a case and has never tried this plan of treatment for intertrigo. I hope he will do so, and, if he doesn't get the results I describe, will write me about it. I believe this simple plan will cure every time.

JOSEPH W. GREGORY.

Cisco, Tex.

THE DIPLOCOCCUS CATARRHALIS AND THE GONOCOCCUS

I have been impressed for some time with the omnipresence of the diplococcus catarrhalis. I should be very much pleased if some of the family, doing considerable laboratory work, would check me up on one point.

In making bacteriological examinations of urines I have found a diplococcus that resembled the Neisser organism in all characteristics except size. Cultures in many instances showed it to be the catarrhalis. When both organisms were present at the same time, the Neisser germ was very much larger than the catarrhalis.

The point is, have others been finding the catarrhalis in the urinary secretion, in chronic cystitis and other chronic inflammatory conditions of the urinary tract; and should we not invariably make cultures before giving a final decision in these cases? I am afraid many of us have been guilty of diagnosing gonorrhea on many occasions when no gonorrhea was present.

WM. BOWEN.

Knoxville, Tenn.

[What you state is unquestionably true. It is essential, except in the very acute, clinically characteristic cases (and even then it is probably desirable) to make a culture in all cases where the accuracy of a diagnosis of gonorrhea is at all in doubt. This should always be made from Gram-stained smears. Of course Gram-negative diplococci may be either gonococci or micrococcus catarrhalis. To decide the matter, the culture material must be transferred to the culture media immediately after obtaining it from the pa-

tient. The micrococcus catarrhalis, however, is rather rare in acute cases; in chronic cases it is much more frequently found.

The micrococcus catarrhalis grows on plain agar at room temperature; the gonococcus does not develop under such conditions. The micrococcus catarrhalis also does not produce acid in glucose media. While the original cultures may grow only slightly, resembling

In the female, the discharge from the urethra and cervix uteri are examined. The vagina will rarely show gonococci, except in the discharge of vulvovaginitis of children.

I agree with Doctor Bowen absolutely that cultures should be made before giving a final decision in these cases. However, in the chronic conditions we have a much better method of diagnosis—much simpler and much more positive—in the complement-fixation test for gonorrhea, which of course is not elicited in micrococcus-catarrhalis or other non-gonorrheal infections.—Ed.]



John J. Apple—Paralyzed but cheerful; also a "hustler"

gonococci, subcultures usually prove very luxuriant.

There are also several other organisms, usually not found in the genitourinary tract, that are similar to the gonococcus in morphology and Gram-negative, especially the micrococcus pharyngitis siccus, the colonies of which show a crinkly dryness, and also the micrococcus pharyngitis flavus, which is somewhat yellowish and waxy in appearance. Most of these, of course, are only encountered in the respiratory tract. Except in the acute cases, there is some tendency to show involution forms, round, irregular and uneven cocci often being present.

The best method in diagnosis in cases of chronic gonorrhea is to direct the patient to drink alcoholic liquors and eat stimulating food, taking active exercise practically amounting to over-exertion; then he should present himself at the doctor's office with a full bladder. A portion of the urine should then be passed, to wash out contaminating organisms from the urethra. The prostate and seminal vesicles are now massaged and the drops of discharge forced out by this massage should be received in a small, sterile petrie dish; finally the remaining urine should be passed into a sterile bottle, and smears and cultures made immediately from the discharge and the urine.

A PICTURE OF JACK APPLE

In the March number of your journal you have a very interesting article about Jack Apple, which it gives me pleasure to confirm. I saw him shortly after the accident had happened. I found him lying on his back—and he is in that same position yet, almost seven years, and as cheerful as can be. Everybody in Savannah knows Jack. He is on the job every day. Weather does not

keep him in. Besides his insurance, he has a modest printing-plant, and he hustles after jobs between times. Jack oversees all the work, such as labels, bill-heads, cards, letter-heads, and the like.

His father died shortly after the accident, but he is in good hands. His mother, whose only thought is for Jack's comfort, thinks nothing is too much for her to do for him. Jack is a sweet young man, and he has a host of good-looking admirers in the young ladies. I enclose his picture recently taken.

J. WEICHELBAUM.

Savannah, Ga.

[We are all grateful to Doctor Weichselbaum for this interesting sketch and for the picture of "Jack," which we are reproducing.—Ed.]

NO SEPSIS HERE—WHY?

Why is it that we cannot, in all such cases as the following, have equally good fortune in preventing sepsis?

At about 4 p. m., September 26, a gentleman asked me to go down to his place to see a negro woman. He said he did not know the trouble, but he thought a baby was born the night before.



A Model Small Hospital

—Arthur H. Busch, Architect

I found the patient in a little log hut about fourteen feet square. She was about twenty-three years old, mother of two children, the oldest being two years old, and the other born that morning about 4 o'clock. The woman was in a bed of hay, with old corn-sacks for covers, and in the bed were two dogs and an old cat with four half-grown kittens. I found the baby, with the afterbirth still attached, wrapped in an old corn-sack, and those young cats making a meal eating away on that afterbirth. Every description of filth was in the bed. The floor and bed-clothing were wet.

Now, why in such cases do we not have to contend with sepsis, while we meet with it often when we take all the precaution possible. I meet with cases like the above often, without having any trouble of any kind.

THOMAS LAWSON.

Longstreet, La.

[Many of these people are fine animals—not much else to be sure. However their resistance is higher than that of many people who live in steam-heated flats and do no work with their hands. That seems to be

the principal reason why so generally they escape sepsis. However, there is a difference between pus-infested dirt and "just dirt." The latter may smell to heaven and offend every sense, yet be relatively innocuous. Has any reader a comment?—Ed.]

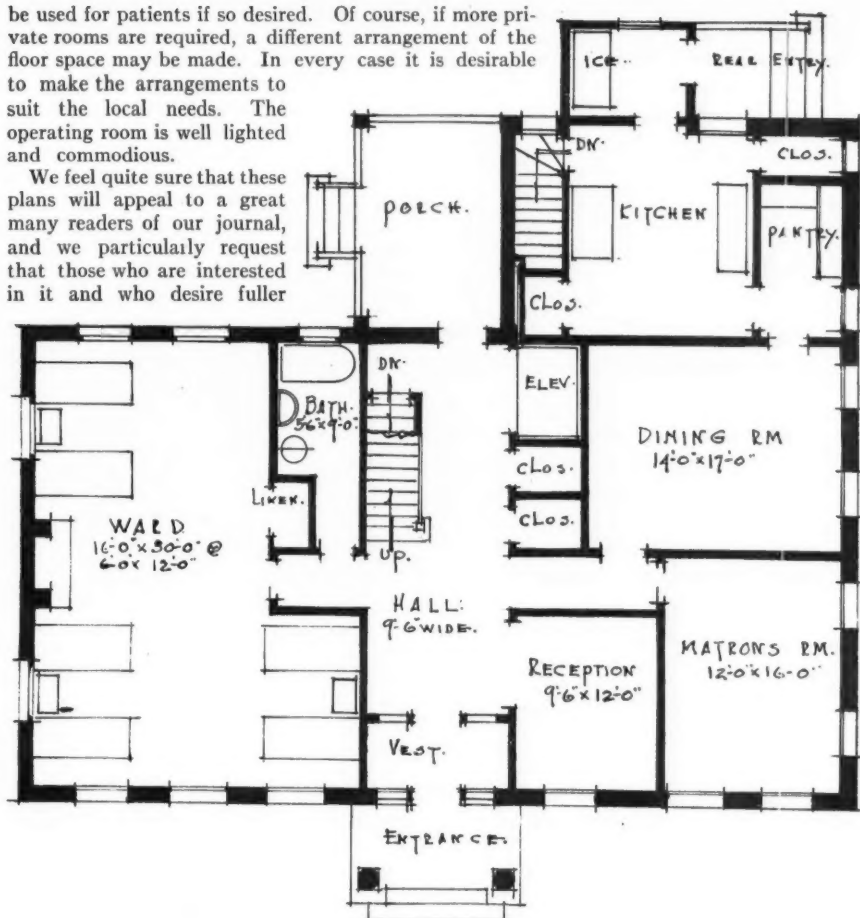
PLANS FOR A SMALL HOSPITAL

From time to time we have received inquiries from readers of CLINICAL MEDICINE as to where they could secure plans for a small hospital, suited to the needs of small towns or for a physician or a group of physicians who desire to build an up-to-date private institution. At our suggestion, Mr. Arthur H. Busch has made drawings and prepared plans for such a building. We reproduce herewith a sketch of the completed building, with floor plans. This building may be built of brick, fireproof tile, or cement, and even of wood, although the more permanent material is greatly to be preferred. As will be seen, provision is made for a well-lighted, well-ventilated, and modern institution.

There are two six-room wards, one two-room ward, and two other rooms which may

be used for patients if so desired. Of course, if more private rooms are required, a different arrangement of the floor space may be made. In every case it is desirable to make the arrangements to suit the local needs. The operating room is well lighted and commodious.

We feel quite sure that these plans will appeal to a great many readers of our journal, and we particularly request that those who are interested in it and who desire fuller



First Floor Plans of Model Hospital

details will communicate directly with the architect, Mr. Arthur H. Busch, 1306 Gregory Ave., Wilmette, Ill. Mr. Busch has had experience in the planning of hospitals and knows just what is required in an institution of this kind.

In making plans much depends upon the care with which all the details are attended to. It is not sufficient to have a rough general scheme as to walls and partitions. Materials must be studied; the problem of ventilation must be taken care of; floors, walls, plumbing, and lighting are all of the utmost importance, and must be made modern and sanitary. The small expense involved in the employment of an architect he can often save you several times over; and you will be

sure when you get through, providing an expert of this kind is employed, that you are getting what you want, and in many cases you will be spared a very considerable initial expense through his expert advice. We advise everyone interested to communicate with Mr. Busch.

Next month Mr. Busch promises to give plans of a physician's bungalow home of small cost. This will undoubtedly appeal to a great many of our readers.

CASES TREATED WITH BACTERINS

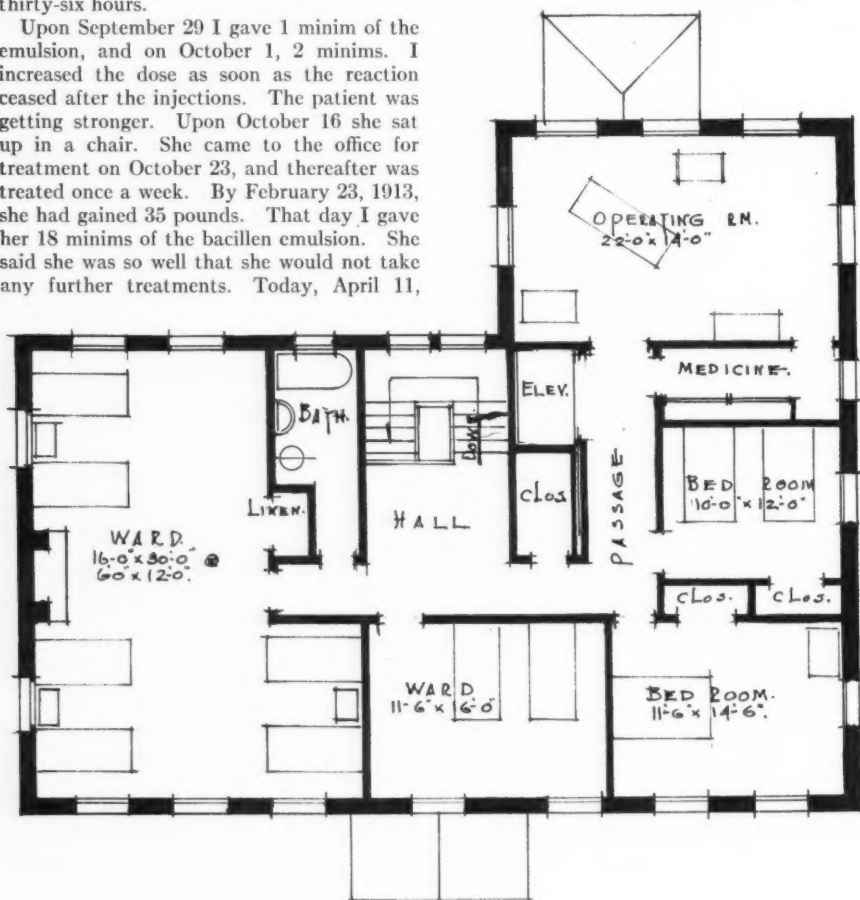
I wish to cite a few cases to illustrate my experience with bacterins and other biologic products.

Case 1. *Tuberculosis*. Hazel E., age 16. Family history of tuberculosis. She had been treated, by a brother physician, for typhoid fever for six weeks before the writer was called into the case. I will not give the clinical findings, except to say that tubercle bacilli were found in the sputum, and the case finally diagnosed as one of miliary tuberculosis. The patient had been in the hospital and was brought home to die. At that time (September, 1912) I had had no experience at all with tuberculosis, but decided to try them, since the case seemed hopeless in any event. The patient was so weak that only 1-2 minim of Mulford's bacillen emulsion was used, this being given on September 27. A violent reaction occurred in a few hours. The temperature was high, and there seemed no hope at all. However, the reaction subsided in thirty-six hours.

Upon September 29 I gave 1 minim of the emulsion, and on October 1, 2 minims. I increased the dose as soon as the reaction ceased after the injections. The patient was getting stronger. Upon October 16 she sat up in a chair. She came to the office for treatment on October 23, and thereafter was treated once a week. By February 23, 1913, she had gained 35 pounds. That day I gave her 18 minims of the bacillen emulsion. She said she was so well that she would not take any further treatments. Today, April 11,

1914, she is well, and is to be married in June. She has passed a successful examination for life insurance.

Case 2. *Tuberculosis*.—Mrs. H., suffering from pulmonary tuberculosis, both lungs being involved. May 13, 1913, the Moro test was positive and tubercle bacilli were found in the sputum. She was given 1 minim of bacillen emulsion (Mulford) as first dose; May 21, 2 minims were administered, and this treatment was continued weekly thereafter. By September 24, she had gained 18 pounds. On that day I gave 16 minims of the emulsion. She was unable to continue treatment for financial reasons, and was sent to a state institution. The examining physician told her that the left lung was healed entirely and the right one partially. She was asked what treatment she had been receiving, as the



Second Floor Plans of Model Hospita

improvement had taken place within the preceding three months. At last reports she was still improving and "getting fatter all the time."

Case 3. *Rheumatism*.—Mrs. M., age 58, farmer's wife, suffering from chronic rheumatism. She had taken medicine until her stomach would not retain the lightest diet. I used strepto-pneumo bacterins (streptococci and pneumococci) at 5-day intervals, beginning with 100 million of the former and 50 million of the latter, and gradually increasing the dosage. The patient improved. I administered the bacterin at weekly intervals for six doses. At the end of that time the patient was able to walk upstairs—a thing she had not done for more than two years. The first treatment had been given her in bed. After a year and a half there was no return of the trouble.

Case 4. *Typhoid fever*.—Miss B. Widal positive. I gave her a dose of typho-bacterin, 125 million killed bacteria, and one day after the reaction from this had ceased repeated the treatment. Dosage was gradually increased. At the end of two weeks of this treatment she was sitting up and quarreling with the doctor for not allowing her to eat more. Before giving the bacterin I gave 5 grains of calomel at a single dose, followed by a laxative saline; the triple sulphocarbolates were employed as usual.

Case 5. *Typhoid fever*.—Miss G. Widal positive. Doctor nervous. He had ordered and paid for tickets and steamer passage, his vacation being only ten days away. The patient had a temperature of 103° F. when first seen in the evening. Typhoid bacterin was given. Next day at the same time the temperature was 99° F., and the second day it was 101° F. Then another injection of the bacterin was given and the temperature fell to 98.6° F., then rose to 100° F. A third injection was given, after which the temperature remained at normal and the patient was up when the case was turned over to another physician. The temperature never rose above normal after that.

Case 6. *Typhoid fever*.—Mr. W. Widal positive. Temperature (evening), 106° F. A typhoid bacterin was given and the temperature fell to 99. The next day it was 104° F. Another injection of the bacterin, and the temperature became normal, but the next day rose to 102° F. A trained nurse, a relative of the patient, informed the family (and the doctor) that some physicians had told her vaccines caused tuberculosis. As there was a tubercular tendency in the

family, thinking to protect myself in case something should occur, I allowed myself to be influenced by her remark, although the patient said he was feeling fine, and really was better. In two days the temperature was up to 105° F. and the patient was delirious. He was in bed fourteen weeks, with the worst case of typhoid fever it had been my experience to encounter. He finally recovered, but I now regret that I did not use the vaccine further.

Case 7. *Acne*.—Mr. F. He had suffered with acne facialis for fifteen years; had consulted specialists in skin diseases, but without improvement. I gave staphylo-acne bacterin at five-day intervals. He was sent south by his employers, where he remained six weeks. He wrote me that the improvement continued. On his return I gave him ten doses, at five-day intervals, and then discharged him. After nine months there is no sign of a return of the trouble.

Case 8. *Acne*.—Mr. M. His face was a mass of bleeding pustules, covering both cheeks, chin and forehead. I gave staphylo-acne bacterins at five-day intervals, but improvement was only slight. I then shortened the intervals and used the leukodescent lamp (blue), when there was marked improvement. The patient is still under treatment.

Case 9. *Mixed infection*.—Mr. C., railroad man. Received slight wound in knee, and went to the company's doctor. I was called in two days later. Found him in great agony; temperature 104° F., pulse 140, tongue coated; delirium at times, and prostration. The leg was swollen and discolored to the hip. I removed the sutures, and a stream of pus a foot high spurted out. The wound was treated surgically for several days, and finally reduced to a suppurating pocket at the joint. No measures employed seemed to influence this pocket. A surgeon in consultation advised opening and draining the joint. Instead, a staphylococcus mixed bacterin was given at three-day intervals, in increasing dosage. The wound healed rapidly after four doses. Four additional doses were then given, and the patient was discharged. There has been no sign of a return of the trouble after a year.

Case 10. *Epilepsy*.—Mrs. D., epileptic for 20 years. She had tried doctors, surgeons, having the ovaries removed, and Christian science. She had been having two and three attacks a week. I administered dicrotalin. 1-150 grain. She was seized with a more violent attack than ever. I continued using gr. 1-150 of the snake venom until the seizures

ceased, and increased the dosage until she is now receiving 1-12 grain. There have been no attacks in two months.

Personally the writer has great faith in the bacterin method of treatment. My failures, as well as those of others, have been due to improperly selected cases and an imperfectly developed product. Bacterins will not cure every case, neither will internal medication. The two methods should be associated. It is my firm belief that this line of treatment has come to stay, and will be more reliable as the manufacturers understand the subject more clearly and put out more nearly perfect products.

As the editor requested papers to be as brief as possible, I will not mention my successes and failures with pneumococcus bacterin, with coli bacterin, with pertussis bacterin, and my invariable failure with the Neisser bacterin. It is sufficient to say that my experience has convinced me of their value.

I have had no experience with autogenous bacterins.

SAMUEL J. COPELAND.

Indianapolis, Ind.

PARCEL POST AND POISONS

I want to express my hearty agreement with the article appearing in the March issue of *CLINICAL MEDICINE*, on the Postmaster-General barring from the parcel post the sending of poisonous drugs. This action by the Postmaster-General is going to impose numerous hardships upon the profession in general, especially those physicians located away from a railway station or express office.

Thus, for instance, I myself am fourteen miles from one and ten from the other railroad station, receiving nearly everything by parcel post. So, what am I to do? I use no more of the powerful anodynes in my practice than I am compelled to, nor do I carry any narcotics in any great quantities. My stock is limited to a few hypodermic morphine tablets and such other drugs as I am compelled to have with me in cases of emergency. I cannot carry a full drugstore, and I am compelled to telephone daily from ten to twenty prescriptions to the nearest drugstore to be filled and sent out by mail to my patients, all of whom live on rural routes.

Now, however, if my prescription happens to contain a small amount of an opiate in any form, it cannot go by mail. Then what am I up against? It is a case of someone driv-

ing eight or ten miles to the drugstore to get my prescription filled. Should I myself happen to overlook some drug I might need and could have sent quickly by mail, I shall instead, be obliged to order it to come by the inconvenient express and then drive ten miles to the express-office. These facts, put in as few words as possible, illustrate the exact conditions to which this new postal ruling exposes us.

Frankly, this ruling is a bad one, and all physicians should get busy at once with a petition to the Postmaster-General, showing him, from a professional as well as the business standpoint, the great inconvenience this will cause us. It may be that he did not once consider these conditions when he made the ruling, but I feel that, if we hasten to present this matter to him in the right manner, he will see the grave error and modify his ruling.

Hence, I suggest that the editorial staff of the journal draw up a letter setting forth the exact conditions as they are and the manner in which this ruling will handicap us, and present this to the Postmaster-General. Also, I should like to hear from other physicians on this subject and what they would recommend to be done. So, then, let's get to work on this, for it is an important factor in the practice of many of us, and one that should be remedied at once.

HAROLD SAMPSON.

Wilder, Idaho.

[This is a sample of a large number of letters received, all dealing with this poison-order. We have already presented the situation as clearly and forcibly as we know how to the Postmaster-General, and so have many other physicians, also numerous manufacturers and druggists, but thus far without redress. The trouble seems to be that in a court decision, made in St. Louis last July, it was decided that no discrimination as regards shipments of poisonous drugs by mail could be made in favor of druggists or physicians, as compared with laymen. The postal authorities, therefore, determined, it seems, to close the mails to all "poisons"—but, no one in authority has come forward with a definition for the word "poison."]

Apparently the only way to secure relief is through appropriate legislation by Congress. Therefore, we urge every physician to write his Representatives, urging them to take up this matter and to evolve some method which shall insure us the use of the mails for the tools of our trade, and on reasonable terms.

Meanwhile, do not let the Postmaster-General forget that the doctors are not getting a "square deal"—and that they know it.—Ed.]

THE OVERLAND CAR PLEASES

I am driving an Overland touring-car, and my expense is lower than on other cars I have driven, which were much lighter; having been, for the last year, about 6 1-2 cents per mile—this including insurance and every cent of expenditure. This is the second year that I am running it. The first year's expense would be less, for there would not be much tire expense. I use rough-tread tires, and never use chains. A light car rides hard, and the shaking or vibration causes backache. My weight is 230 pounds, and I know from experience that a light car is a man-killer.

With the Overland car I never have had any trouble from backache or lameness. The Overland starts equally well in cold and in warm weather, while the motor does not require as much overhauling as those of others I have driven. The clutch on this car has run two years without being touched. My tires run from 5000 to 8000 miles. I shall buy another Overland when this one wears out.

HARRISON G. PALMER.

Detroit, Mich.

MAKING A LIVING, AND HIGH TONE IN THE PRACTICE OF MEDICINE

Today we frequently hear about "impoverished" doctors and the "difficulty to make a living;" we also hear about efforts to solve the problems involved in various ways, some of which without doubt are practical, but others somewhat quixotic, taking society as it now is. To my mind, the matter finally resolves itself into the question of "*trade or profession.*"

If profession be admitted, as it surely will be by all except a limited few of the unregenerate or ignorant, the query remains, "Should we practice it primarily for lucre or for honor?"

My plea is very clear and forcible. Medicine properly appreciated and practiced is the noblest of all earthly callings. When I say properly understood, I mean simply that it should be appreciated and followed closely throughout life, so that more than a competency in pecuniary honorarium cannot and should not be hoped for, or even desired, so long as the spirit of self-sacrifice and always

doing by others as we would be done by prevails.

No physician worthy of the name should even give other advice or example than that which breathes the highest rectitude of purpose, and this is only to follow, as well and as far as may be, the essentials of Christ's teaching, and has nothing to do with humanly manufactured sects or creeds.

BEVERLY ROBINSON.

New York, N. Y.

RESUSCITATION OF THE NEWBORN—QUININE RASH

I call mine a new method of resuscitating the newborn, for the reason that I have been unable to find anything like it described in any of my textbooks. I will be as brief as possible in my explanation.

When, after the delivery, the umbilical cord is tied, have a quilt spread upon the floor, so as to afford plenty of room. Lay the baby face downward, grasp its feet with the right hand and slip the left hand under the chest, with your fingers extending on each side of the child's neck. Now lift the baby (keep it clear off the floor during the entire procedure), and raise its feet up almost perpendicularly, letting its head hang downward. Then slowly lower the feet and bring the child's body into the horizontal position; at the same time flexing the legs and thighs upon the abdomen and make pressure so as to force out the air in lungs. Repeat these movements at the normal rate of breathing—about thirty to the minute.

The advantages of this simple method are these: (1) the blood is kept in the vital centers of the brain; (2) the tongue drops (by gravity) and the glottis is opened, thus allowing a free passage of air upon inspiration; (3) it enables any mucus present to drain from the trachea and bronchi.

In extreme cases, I do not confine myself to this method alone, but, occasionally, change to some of the other known ones. Then, of course, I have two basins of water handy, one hot and the other cold, and give the baby a frequent "dip" into each one.

Perhaps it will not be amiss to say, "Don't give up the baby too soon." I have worked with some of them for as long as nearly an hour before they would get all right; and it means work, sure enough.

Someone has said that quinine given hypodermically would not produce a rash—but it will. Two or three years ago a brother of mine injected 1-2 grain of quinine and urea

hydrochloride into a robust man, and in less than two minutes an intense urticaria broke out. Then the man told us that quinine always would affect him that way.

L. J. GRAVES.

Leighton, Ala.

ANENT THE EXPULSION OF PINWORMS

The article in the February CLINIC describing a novel inunction treatment for pinworms, is very interesting, but the method pointed out for the expulsion of these troublesome tenants is a rather roundabout way, when their ejection can be accomplished by a much shorter route. What I refer to is, on the one hand, the administration of two or three successive doses of the old-fashioned "elix. pro." (tinctura aloes et myrrhæ), or else the more direct method advocated by Prof. James R. Wood, whose favorite remedy was a rectal suppository of pulverized socotrine aloes, which will cause these obnoxious intruders to vacate the premises without even waiting for the benediction.

I like the "short-stops," which appear every now and then in the columns of your valuable journal. They reach the meat in the coconut without unnecessary circumlocution.

GEORGE D. STANTON.

Stonington, Conn.

IS THE DISPENSING DOCTOR LARGELY RESPONSIBLE FOR THE TRAFFIC IN NARCOTIC DRUGS?

It having become the fashion, of late, on the part of certain interested persons, to make the charge that the dispensing physician is largely concerned in the distribution of narcotic drugs to habitués we determined to ascertain the truth of the matter. As we knew of no man who is better informed about the habitual users of opium and other similar drug users we wrote Dr. George E. Pettey, asking him to tell us about his own experience with absolute candor, promising to withhold his letter from publication and consider it confidential if he preferred that we do so.

Dr. Pettey is the superintendent and owner of one of the largest, if not the largest, institutions in the country for the treatment of narcotic habitués. At one time he conducted a chain of these institutions, situated in all sections of the country, from Atlantic to Pacific, so his observations are by no means local. He is the author of the largest and

latest book on the subject, "Narcotic Drug Diseases and Allied Ailments," published by F. A. Davis Co., Philadelphia. If any man in this country knows what he is talking about, Dr. Pettey does. His reply to our letter follows:

To the Editor of Clinical Medicine.—I am in receipt of your letter and in reply will say that I am probably in as good a position to know the facts in regard to physicians supplying drug habitués with their drug as any man living and I am certainly surprised at the contentions of the N. A. R. D. They must be extremely hard pressed for an argument.

During the last fourteen years I have personally supervised the treatment of about 4000 drug patients and have been consulted by fully that many others whom I did not treat. In this entire number I do not believe that there were exceeding a dozen who obtained their drug supply through a physician. Physicians are to blame for getting many of them started on a drug, but it is an extremely rare thing for a physician to continue to supply it to them. As a rule they fall out with the physician because he tries to keep them from getting it.

You need not hold this as confidential unless you wish to do so. You are at liberty to use it as you see fit. It is the truth and I am never afraid to tell the truth.

GEORGE E. PETTEY.

Memphis, Tenn.

[In so far as any physician is responsible for getting a patient started in the use of morphine (unless the patient is suffering from an incurable chronic and painful disease) he is culpable, and should be made to realize that fact. But, I believe I do not exaggerate in making the statement that it is the prescribing physician who makes the largest percentage of "drug-fiends." He loses control of his patient—loses control of the drugs administered. Realizing this fact, there are thousands of doctors who ordinarily write prescriptions for most of the remedies which they employ but who insist—quite properly we think—that narcotics should as largely as possible be given by their own hands. The hypodermic syringe should never be intrusted to the patient himself.

The narcotic evil is a terrible one. We should realize our part in the responsibility for its existence and should use every reasonable effort to put an end to it. But we should vigorously oppose every effort to take the personal administration of drugs of this class out of the doctor's hands in order to give the

druggist a profitable monopoly in handling them. And saying this we gladly testify that we believe in the druggist—believe he has an important part in the economics of medical practice and should be taken into an offensive and defensive partnership with the doctor whenever the interests of both parties and the public can be best subserved by so doing.—Ed.]

MORE HEAD-LICE CURES

Allow me to suggest mercurial ointment, Fowler's solution, and incineration for eradicating lice on the head. Fowler's solution will kill lice almost instantaneously. Saturate the hair with it. Two hours afterward anoint the scalp freely with mercurial ointment. Then burn all the clothing previously worn by the victim—and away go those lice. (In our local jail we use a spray of what they call "kreso dip." The jailer declares that it destroys lice, bedbugs, and "sich.") But for headlice the treatment described above will give satisfaction. Try it.

Remember, though, that Fowler's solution will blister the scalp if not followed by the ointment. The ointment can be left on for several hours without danger; but, if the application is persisted in, it will salivate. However, the lice can be destroyed without its continued use. Nits do not hatch out in mercurial ointment. Coal-oil (kerosene) is not dependable.

W. P. HOWLE.

Charleston, Mo.

MEDICINE IN THE FUTURE. MALARIA

I notice, in the January issue of *CLINICAL MEDICINE*, Dr. John B. Murphy's prophecy as to internal medication, and not surgery, being our mainstay in the future. If you will turn to Wyeth's "Surgery" of about 1890 (I forget the date), you will find where that author wrote somewhat as follows: "The day is not far distant when an amputation of a limb will be almost a curiosity, for, with our present advancements in antisepsis, it will be resorted to externally, internally, and eternally." These words are not quoted literally, but they give his meaning—very much as Doctor Murphy has predicted.

By the way, please, look up the article on page 81 by Dr. S. M. Waller, and observe the contradiction in paragraphs numbers 4 and 5: (a) "If the patient reaches the hospital in a

reasonable time after the onset, he is treated as follows. To give quinine, we kill our patients." (b) "When a physician is consulted after the onset, he (the patient) is given hypodermically sometimes 60 grains of quinine in thirty-six hours." Now, doctor, which paragraph are we to adhere to?

I practiced for twenty years in the swamp belt of South Carolina, where malarial hematurias of a pernicious type prevail. I knew of one case, at Holly Hill, that of a merchant named Clark, who was up attending to his duties until 11 o'clock on Saturday evening and was dead at 11 next morning.

I cured several severe cases by not giving any quinine, but depended upon 10-grain doses of calomel every hour till four doses were taken; then, after the liver and kidneys had freely responded, and the urine showed perfectly clean, I gave quinine. The hypsulphite of sodium and Warburg's tincture I used, getting this suggestion from one of your alkaloidal magazines.

I rejoice in your success, you certainly get out the very best medical journal extant.

W. TAYLOR EDMUNDS.

Ridgeway, S. C.

[Doctor, there is no inconsistency in Doctor Waller's method of treatment. He does not use quinine in malarial *hematuria*, but he does use it in other forms of malaria, as you will see if you will read again the paper you quote.—Ed.]

ABORTION—PREGNANCY—COUNTY SOCIETIES

The editorial in February *CLINICAL MEDICINE* is true, and I not only fully agree with the statements there made about emmenagogues, but wish to emphasize them.

There is no known medicinal agent that will cause a resumption of the menstrual flow, in other than a physiological manner, without entailing extreme danger. I speak both as physician and as pharmacist. It is an accepted truth, however, that, with mere nominal regulation, there are being sold numberless agents designed to "regulate" women. Some of these are inert and straightout fakes; others contain one or more of the so-called emmenagog, or oxytocic, drugs.

Not only are there an enormous number of drugs easily obtainable, but anyone can buy at a drugstore or elsewhere, for supposedly legitimate purposes, one of the instruments or

simple appliances so often resorted to by women themselves, as well as by a certain class of midwives possessed of about the same accurate knowledge of anatomy that a hog has of the Mosaic Dispensation or a negro bootblack of the recent revolution in chemistry from the ionic hypothesis.

Now add to these facts the verity that until the very recent discoveries of Abderhalden—now verified by American investigators—of the blood stream, and accepted by the profession as proven—we have had at our hands no means of diagnosing pregnancy with certainty before distinguishment of the fetal heart sound; the latter itself at times a hard matter even when the woman is within the bounds of a physiological condition. In diseased conditions, especially when ballottement can not be accomplished as a confirmation, even the best of us are more or less uncertain at times. Good ears, an educated finger, and exhaustive technical knowledge can be at fault in a fleshy subject with pelvic inflammatory conditions. This, even were not the possible presence of extrauterine pregnancy as well as neoplasm always a factor to be considered.

To any or all of these possible complications, suppose your patient makes the statement that her menstrual flow is normal and has been on time. All physicians know that any kind of statement can be expected from a woman with a soul filled with dread of her sin—indiscretion, if you will. Most women have a very well defined idea of what to expect at the hands of society if they are discovered, in fact, most of them know what they would do as social units, themselves, were another the offender.

Suppose the woman knows, as she probably does, that you do not look upon her necessities as she does and would absolutely refuse to "bring her around." A state of mind has been reached where, if her hopes of getting desired results through misrepresentation are not brought about, she is apt to have other recourse. You have a dangerous patient, and have an excellent chance of getting the blame for a case of septicemia or other serious manifestation, of which you are as innocent as the unborn she would destroy. To the above combination, we might suggest adding the possible guilty lover, anxious to escape his own responsibilities. In the majority of cases of this kind, the single are involved.

The picture is not overdrawn in many cases, and the lesson is—"Look out, Mr. Doctor."

If you have a patient whom you suspect of

pregnancy, always exercise the utmost caution. Do not be afraid to call consultation. If the woman is single, do not treat her unless you have a member of the family present, unless circumstances are unusual and none can be there. I should not consider a husband, anxious perhaps to escape his responsibilities as a father, as filling the requirements; better a maiden aunt.

The Abderhalden test is becoming available and doubtless every practitioner will, ere long, take advantage of it in many cases. Do not forget that it is now an accepted thing and as reliable as a Widal test for typhoid fever; that is, after two and a half months—and eventually it will probably be dependable earlier. Although I have seen nothing in the literature taking up this phase, I believe it should be an aid in the always serious problem of extrauterine pregnancy.

Above all, when called to a case of abortion where you are not familiar with every circumstance of the case and its entire history, do nothing without a consultant. Violate this rule only when hemorrhage or other condition threatening the immediate safety of the patient requires.

Finally, let your professional conduct always be such that it frees you from any suspicion of wrong intent in any thing whatsoever. The best way to accomplish this is, to be a member of your local society, to attend its meetings, and be known for what you are among your fellow practitioners.

While not starting this paper with the intention of getting upon the subject of the belonging to your medical society, I say, Do it. If you happen to be the only one in your vicinity who belongs to a particular school of medicine, let it make no difference. We all have the same anatomy, physiology, and chemistry, and are progressing together on therapeutics; and all of us are being taught by the men of the microscope and of the chemical laboratory things of which we did not dream. All of us are working for the same end—perfection of our art.

If it be permissible for one not of the Homeopathic branch, I will quote, from memory, a sentence in the "Organon of the Art of Healing": "The sole and only excuse for a physician's existence is, the cure or alleviation of disease." Not verbatim, as the "Organon" is not at hand. If any Homeopath wishes to make critical correction, he may; however, I will here state that I do not make accusation that Samuel Hahnemann said that all diseases were caused by the "itch," but rather that, in his theory of

"psora," he reached ahead of his time and should have been at work now with a high-power microscope and the modern staining-media. Sam had the bacterial idea ahead of his time.

I think the modern medical man in any medical affiliation is past criticizing Hahne-mann, Schuessler, Beach, Thompson or any other who departed from the accepted in his search for more light. We are daily departing from the accepted, else yellow-fever would still be a horror and modern sanitation a farce.

A. L. NOURSE.

Sawyer ville, Ala.

OUR LONDON LETTER

Surgeon-General Gorgas has paid us a visit recently on his way back from Rhodesia, where he has been inspecting the malarious districts in the Mazoe district. He was accompanied by Major Noble and Doctor Darling. The papers have given ample recognition to the great scientific achievements in Havana and Panama, but Gorgas himself has received what undoubtedly will be more gratifying to him—a warm and appreciative welcome from the cream of the British medical profession. On March 19, he was entertained at luncheon by Sir Starr Jameson ("Doctor Jim," of the Jameson Raid) and the directors of the British South Africa Company, and the same evening he and his colleagues were guests of honor at the mess of the Royal Army Medical Corps, at the Royal Army Medical College, Milbank. The Director-General of the British Army Medical Service presided, and among the distinguished guests present were Surgeon-General May, Director General of the Royal Naval Medical Service, Sir William Osler, Major Sir Ronald Ross, and Professor Martin of the Lister Institute of Preventive Medicine. About eighty members of the Royal Army Medical Corps were present.

On March 23, Doctor Gorgas read a paper in the afternoon, before a crowded assemblage at the Royal Society of Medicine, on the sanitary work of the Panama Canal. He described the physical characteristics of the Canal Zone and its former deadly character, and detailed those measures, so well known to you already, whereby one of the most unhealthy regions in the world has been converted into a place where the white man can live and work in a state of health and comfort that compares favorably with most large

cities in the civilized world. His lecture was illustrated by a large number of lantern-slides. An enthusiastic vote of thanks was accorded him.

In the evening, Gorgas and his colleagues were entertained at dinner, at the Savoy Hotel, by the medical profession, a brilliant company having assembled to do them honor. The chair was occupied by Sir Thomas Barlow, president of the Royal College of Physicians, and among the more distinguished guests were the Archbishop of Canterbury, Lord Chancellor Haldane, the American Ambassador, Viscount Bryce (who as Mr. Bryce recently was British ambassador at Washington), and Lord Moulton. The Royal College of Surgeons was represented by its president, Sir Rickman Godlee, who not so long ago was among you at the inauguration of the American College of Surgeons. Other learned societies also were represented by their respective presidents—the Royal Society of Medicine, by Sir Francis Champneys; the Medical Society of London, by Sir David Ferrier; the British Medical Association, by Dr. Ainslie Hollis; the Society of Tropical Medicine, by Sir Havelock Charles; the University of Oxford, by Sir William Osler. Surgeon-General May represented the Navy and Surgeon-General Sir Launcelotte Gubbins, the Army. Others present were: the American consul-general, Mr. J. L. Griffith, Sir William Church, Sir Ronald Ross, Sir James Reid, Sir Watson Cheyne, Sir John Tweedy, Sir J. Kingston Fowler, Sir John Simpson, Sir John Broadbent, Sir J. Rose Bradford, Sir Frederick Eve, Sir Anthony Bowlby, Sir Arbuthnot Lane, and many other of the élite of the medical profession.

The toast of "The President of the United States" was fitly proposed by Lord Bryce, and was responded to by the American Ambassador, which latter said that the promotion of Colonel Gorgas to the surgeon-generalship of the United States army was a good example of President Wilson's quality and method of working. He thanked the British government for the cordial reception accorded to Mr. Wycliffe Rose, the representative of the International Health Commission of America, and for the generous and prompt aid given him in his mission of studying the hookworm-problem in Egypt, Ceylon, and the Straits Settlements.

The Chairman, in calling on Sir Havelock Charles to propose the health of the guest of the evening, gave credit to Sir William Osler for the thought of honoring their eminent guest by a dinner that should be representa-

tive, not only of tropical and English medicine, but also of the English Church and the State.

Sir Havelock Charles, in proposing the toast, spoke in the most eulogistic terms of their guest and his great achievements, and prophesied for him a great place in the esteem of posterity. Surgeon-General Gorgas responded in just the sort of genial witty speech that all who know him would look for from his lips on such an occasion. He referred gracefully to the tireless and ungrudging services rendered in the construction of the Canal by the force of 60,000 workmen, of whom, he said, some 45,000 negro laborers from the British West Indies were devoted British subjects and an excellent body of men in every way, even if they were inclined to claim the Canal lock, stock, and barrel. The Canal, he said, would, without doubt, be formally opened next January.

On the following day the University of Oxford conferred upon Surgeon-General Gorgas the degree of D. Sc., *honoris causa*.

The forthcoming meeting of the Clinical Congress of Surgeons of North America, which is to be held in London in the week beginning July 27, under the presidency of Dr. J. B. Murphy, is being eagerly looked forward to and prepared for. The Chairman of the Reception Committee is Sir Rickman Godlee, and the honorary secretaries are Mr. H. S. Pendlebury and Mr. Herbert J. Paterson. Special clinical programs are being arranged at all the large schools and general and special hospitals. The headquarters will be at the Hotel Cecil. Among the foreign surgeons who have consented to deliver addresses, are Professor Von Eiselsberg, of Vienna, Professor Tuffier, of Paris, Professor Schmiegelow, of Copenhagen, and Dr. J. M. West, of Berlin.

Some remarkable statistics relating to the prevalence of venereal diseases in Great Britain were given by Dr. Douglas White before the Royal Commission on Venereal Diseases at its twenty-sixth meeting recently. The speaker estimated that there were yearly in London about 122,500 fresh cases and, in the same period, 800,000 cases in Great Britain. Of the 800,000, approximately 114,000 cases would be syphilis and 686,000 chancroid or gonorrhea. The total number of syphilitics in Great Britain he placed at about 3 millions.

The pitiable credulity of otherwise sensible

people in regard to quackery has received fresh illustration recently in London by the revelations that have been made at the trial of a quack cancer curer. When one patient who had consulted him, without getting relief, told him she had been advised by a surgeon to have an operation done, the quack scoffed at the idea and told her that he had been a doctor himself, but had lost his degrees because of drunkenness. In spite of this, the patient's husband took her to this quack for treatment and found him intoxicated.

Such a trifle, however, mattered little, for the assurance that he was always more skilful when in that condition prevailed and treatment, which consisted of the injection of some fluid (said to be a herbal extract) into the growth, was undergone. After giving his injections, the quack always took the basin away, and presently returned with something in a bottle, which he assured the patient was the cancer that he had just removed.

It was shown at the trial that one of these supposed cancers was a piece of the lining membrane of a pig's entrails, and that he had been in the habit of providing himself with "cancers" from the pork-butcher's regularly. The statement that he had been a doctor but had had his diplomas taken away was untrue.

Mr. W. Bruce Clarke, senior surgeon to St. Bartholomew's Hospital, London, died on Saturday, March 28, at Eastbourne, a fashionable seaside resort on the south coast, at the age of 64. He was educated at Harrow, and proceeded thence to Oxford University, where he was graduated with first-class honors in Natural Science and took the M. B. degree in 1877. He also gained the Burdett-Coutts university scholarship. He became a member of the Royal College of Surgeons in 1877 and a Fellow in 1879. He was a member of Council and of the Court of Examiners of the Royal College of Surgeons, and examiner in surgery to Oxford University, and to the Conjoint Examining Board of London. In 1886 he obtained the Jacksonian prize for his essay on the diagnosis and treatment of diseases of the Kidney amenable to direct surgical interference. He published a Handbook of the Surgery of the Kidneys in 1911 and contributed freely to the medical press. He was at one time surgeon to St. Peter's Hospital and to the West London Hospital.

"M."

Just Among Friends

A DEPARTMENT OF GOOD MEDICINE AND GOOD CHEER FOR THE WAYFARING DOCTOR

Conducted by GEORGE F. BUTLER, A. M., M. D.

WOMAN is truly always interesting herself, and is able to make things interesting for us men, but those who have given the subject any study will admit that, when it comes to considering her from the standpoint of her diseases, her disposition, her impulses, we know but little about her. Indeed, the majority of us are like the man whose little boy said to him, "Papa, did you know mamma long before you married her?", and who gave for answer: "No, my dear boy, I did not; and we have been married a long time, and I don't know her yet."

But, however little we know of woman's makeup, her possibilities, we do know that all of the best interests of humanity, all that pertains to the well-being, the perpetuity and continuity of the race is centered in women. And so, we, as physicians, should do what we can to preserve woman and her health.

Medical men and physiologists know that with the continuing of the species man has but little to do. He may furnish the fructifying force, but woman furnishes the material elements that go to build up the successors in the evolution of our race. In other words, the vital spark that woman receives is microscopic and infinitesimal; she it is that furnishes the life-blood that permits growth, development, and the perfect new being. The product that hath been blood of her blood, flesh of her flesh, and bone of her bone is as much a part of her as either half of her body would be.

When we realize this physical fact, we realize that woman makes up ninety percent of the whole scheme of life; and, surely, it is our duty to guard and protect her to the fullest, and to help her to work out to the best advantage her own salvation—for it is our salvation, too.

We believe that woman is endowed with the same faculties as is man; nevertheless, some faculties are more developed in man, while others are more dominant in woman; but, in the aggregate, woman, we feel, is so

formed as to be dependent upon man. And this dependence, I think, is so clearly indicated in woman's entire organization, and is so generally admitted, that the woman who is considered the most fortunate in life has never been independent, having been transferred from parental care and authority to that of a husband.

What, then, is the part destined to woman? The answer is clear. Her destiny is not only to be the matrix in which humanity is cast, but also the *nutrix*, the chief nourisher and supporter of mankind, whether this be to a helpless infant eagerly seeking milk at her breast or to suffering humanity requiring love's watchful tenderness to restore it to health.

Thus, when we speak of woman's proud position in the world, it is not comprised in the mere facts of conceiving, bringing forth, nursing, and fostering the child; but she is the mother of its intellect as well as of its body, and has to preside over its dawn, so as to enable it to remember itself, and to disclose its latent powers by the means of language. She is, likewise, the mother of the moral man, and has to call forth that moral "light which every man brings with him who cometh into this world," and to develop sentiments which, if fostered in early life, will never be eradicated.

But, all women are not destined to be mothers; and it would be taking a very narrow estimate of the admirable utility of woman in the circle of society to fancy her useless unless she is a mother. As among bees there is a large percentage of imperfectly developed females, called laborers, nurses and, improperly, neuters, which are indispensable to the well-being and multiplication of the humming communities, so with us, that large proportion of women who have not been called upon to be mothers are, nevertheless, most useful to the human race, to whose many wants they minister and whose weakness they strengthen, the milder influence tempering and softening

asperities of the stronger sex. For this reason, doubtless, women have been endowed with a greater vital tenacity than men, and for the same reason there always are more women than men in the world. When a nation is destined to dwindle and become extinct, the number of women becomes less than that of the other sex.

For a few months I purpose to write on the subject of female hygiene; the diseases to which women are more subject than men; how certain diseases affect men and women differently; and observations on how to treat the female patient.

Having to deal with many hysterical women, I will begin with that complaint so peculiar to women—hysteria; for, although men often are somewhat similarly affected, the disease, as affecting the male sex, may be ignored.

Hysteria seldom occurs except during that period of life in which the uterine functions are in an active condition, or, from the age of thirteen to that of forty-five or fifty years; and, when it does exist, there frequently is found some derangement of these functions.

How many of our patients are subjects of hysterical complaints, how many diseases are influenced by hysteria, and how often does hysteria simulate certain organic diseases.

Almost every organ in the body of a hysterical woman may, from trivial causes, take on the form and appearance of real organic disease, while in reality no such disease exists; the whole of the symptoms being a more or less perfect imitation of the real disease, taxing the skill and experience of the physician often to the utmost to detect the difference.

In my work at Mudlavia, I see quite a number of "hysterical joints." Sir Benjamin Brodie has said that, in the higher classes of society, four-fifths of the female patients who are commonly supposed to have some disease of the joints labor under hysteria, and nothing else.

Not long ago I had under my care a young lady who suffered from severe pain in her knee and hip. At times she could not stand on the affected limb nor bear to have it moved. For a while I was led to believe there was ulceration of the hip-joint; but, noticing that the more attention I paid to the case, the worse she got, I finally made a diagnosis of hysteria, and under treatment suitable to

hysteria the rigid contractions and pains all gave way.

I have seen many women with hysterical spines, complaining of pain and tenderness in their backs and weakness in their lower extremities. Many women unnecessarily have been confined for months, and years, even. I have had two cases, one a young unmarried woman and the other a man thirty-eight years old, a minister, both of whom had been confined to their beds—one for two years, the other for three years—for supposed spinal disease, but who, in reality, had nothing the matter with them but hysteria. I cured them both, largely by mental healing.

Such patients as these have a peculiar mental condition. After lying upon their backs for some time, they are unable to stand or walk, simply because they think they can not. The instant they make a *real bona-fide effort*, the moment their faith and belief in their ability to walk reaches a certain point, they not only *can* but *do* use their limbs, and a cure is effected.

The young lady referred to had been made worse by her mother's solicitude; the mother believed she had a serious spinal trouble, waited upon her constantly, and kept her flat on her back in bed. She lost all power of her legs, but was well nourished, for her appetite was good. I took the patient away from her mother and her home environment and placed her in a hospital among perfect strangers. Then, by suggestion, firmness, and the aid of an intelligent, competent nurse, she was taught and made to walk.

The young woman at first declared she could not stand up, to say nothing of trying to walk—that the mere attempt would "kill her." It is needless to say, it did *not* "kill her" nor did she ever once fall as she was learning to walk again, but in a few weeks she was well, and has remained well ever since. A more surprised woman I never saw than was her mother when she met us at the depot on our return from the hospital and saw her daughter step unassisted from the car and walk briskly toward her.

A similar case has been described by Doctor Bright. He was called upon to visit a young lady who had been confined to bed for nine months. If she attempted to move, she was thrown into a paroxysm of agitation and an excruciating agony affecting more particularly the abdomen. She had almost lost the use of her lower limbs, and she and her friends

seemed to have given up all hope of her recovery, but she presented no appearance of visceral or organic disease.

Doctor Bright made a diagnosis of hysteria. She was thought to have derived relief from some stimulating injections and certain pills. As her friends were in moderate circumstances, Doctor Bright talked seriously with her mother, recommending her to substitute water for the injections and bread-pills for those she had been in the habit of using. The mother soon found that these means produced just as tranquilizing an effect upon her daughter as had hitherto been ascribed to the medicine! His visits became less frequent, and after an absence of a fortnight, upon renewing his visits, no change had taken place. He attempted to get her removed to the sofa, but found it impossible; the paroxysm nearly overcame her.

After having watched the case for nine months more and finding no change for the better, he made another call one day. This time the girl's sister met him at the door with a smiling face, and told him that her sister was quite recovered. She then related how, three mornings before, under a deep religious emotion, she had completely recovered all her power! And he found her sitting up working and amusing herself.

In many cases of hysterical joints, where the joint is stiff, bent up and immovable, any attempt to straighten it being attended with great pain, relief may be obtained by pouring a stream of cold water upon the part affected. After the stream of water has been kept up for a while, the patient may complain loudly, but the stream should be continued. Under a continuance of the cold water, the limb trembles, the muscles relax, and the limb becomes lithe, lissom, and manageable. Occasionally the state of rigidity returns, but the application of the cold douche overcomes it—each application becoming shorter in duration than the former, till at length the mere mention of "cold douche" overcomes it, every time, and is sufficient to restore the flexibility of the joint.

Thornton quotes a case, reported by Sir Charles Clark, of a young lady in the highest aristocracy, who was affected with "lockjaw"! She could not open her mouth, either to speak or to eat. He comprehended at a glance that it was a vagary of hysteria, mimicking the real disease. Consequently he placed her

with her head hanging over a tub at the bedside and poured from a pitcher cold water over her head and face; before he had emptied the second pitcher the patient began to scream, giving audible evidence that the "lockjaw" had vanished, never to return while she was under his treatment!

All these pseudo diseases will terminate suddenly, under strong mental impression. The mental condition is so distorted that deception and untruthfulness become the rule. The most disgusting habits are practiced by many of these patients, for no apparent reason other than a wish to gratify a morbid longing for sympathy, commiseration, and notoriety or the indulgence of erotic and prurient ideas.

It is a trick of some hysterical women to pretend they suffer from retention of urine, and that, although the bladder is full, they cannot make water. The daily introduction of a catheter by the doctor suffices to gratify their morbid and prurient feelings. The difficulty will disappear, usually, upon the patient's being left, without pity, to her own resources; still, girls have been known to drink their urine, in order to conceal the fact of their having been obliged and able to void it.

The state of mind evinced by many of these hysterical young persons is such as to entitle them to our deepest commiseration. The deceptive appearances displayed in their bodily functions and feelings find their counterpart in the mental. These patients are deceitful, perverse, and obstinate, practicing, or attempting to practice, the most aimless and unnatural impositions. They will produce fragments of common gravel and assert most positively that they were voided with the urine. Or they will secrete cinders or stones in the vagina and pretend to be suffering from calculous disease. While I was medical superintendent of Alma (Michigan) Sanitarium, I had a patient who, through her urethra, introduced a large quantity of chewing-gum into the bladder, which required an operation for its removal.

Cases are on record where women have simulated suppression of urine and, after swallowing the urine they have passed, would vomit it again, to induce the belief that the secretion had taken place through a new and unnatural channel.

According to Patrick, certain anesthetics are typical of hysteria. First, that in patches, single or multiple, regular or irregu-

lar, without any relation to the distribution of the sensory nerves. These patches may be located anywhere on the body, but their existence frequently is unknown to the patient. The so-called stocking, glove or sleeve anesthesia, that corresponds in distribution to the garment named and stops short of a circular line about the extremity, occurs in scarcely any other disease except in multiple neuritis, and here only in a modified form, the anesthesia gradually decreasing from the extremity of the limb toward the trunk and shading off into the normal. A hemianesthesia, which is limited sharply and exactly by the middle line, especially if it involves the special sense on the same side, is equally characteristic.

Another distinctive manifestation of most hysteric anesthetics is that they do not interfere with cutaneous reflexes and automatic accomplishment. For instance, a woman with total anesthesia of the hand will tie a bow beneath her chin with her usual dexterity. A man with complete anesthesia of the buccal cavity will find no difficulty in the manipulation of the alimentary bolus. These acts would be impossible in organic anesthesia.

A hysterical anesthesia, too, usually is out of all proportion to the paralysis, whereas in organic affections just the reverse holds true, the motor functions suffering more than the sensory. A complete anesthesia of the entire body in a patient still able to walk about is sure to be hysterical, as is also one which varies rapidly in distribution or degree.

Among the anesthetics may be mentioned concentric contraction of the visual field, with inversion of all the fields, which are symmetrically contracted; that for blue being as small or smaller than that for red, while for the normal eye it is distinctly larger. A striking peculiarity of this contraction of the hysteric visual field is that, even when extreme, it does not cause the patient, in moving about, to collide with objects lying outside the hysteric but within the normal field—that is, with objects which he does not see.

Another eye-symptom pathognomonic of hysteria is monocular amaurosis, with binocular vision. Prisms, the apparatus of Bleebs, and other devices demonstrate that, under certain conditions, the patient does see with the blind eye. Hysteric amblyopia and amaurosis frequently are accompanied by anesthesia of the eyelids and conjunctiva.

A monocular diplopia or polyopia is hysteric, as is also micropsia and macropsia. These, like many other symptoms, may be unknown to the patient and must be sought for.

Loss of the pharyngeal reflex, tenderness to the left of the cervical spine and of the ovarian region, and what Pitres has called haphalgesia, are important stigmata. The last is rare, and is an intense hyperesthesia of touch for substances, as brass, for instance!

In hysteric paralysis of an extremity, the various muscular groups are nearly equally affected; isolated paralysis and, hence, paralytic deformities, as wrist-drop and talipes, are of rare occurrence. On the other hand, deformity owing to contracture is frequent. Relaxing the affected muscles by position has here no effect on the contracture. For instance, contracture of the fingers is not relaxed by forcible flexion of the wrist as in organic disease. Hysteric paralysis of the face is very rare, while facial contracture, which may simulate it, is not very infrequent.

DELAYED CHLOROFORM POISONING

The *Paris Médical* for December 21, 1912, abstracts a report by Dr. Carretier, in the *Rennes Médical*, according to which two days after a difficult chloroform anesthesia in a laborer 26 years old (amputation of the finger by disarticulation) icterus became noticeable, together with pain in the liver and discoloration of the feces. The condition of the patient soon again became normal, but symptoms of uremic coma appeared suddenly on the fourth day and terminated the life of the patient in the course of forty-eight hours.

WANTED: TUMORS

In our research laboratories, we are now doing a lot of experimental and diagnostic work with the Abderhalden tests. In order to do the best work possible, it is essential that we should have a goodly collection of malignant tumor-tissue of various kinds for use as "fundaments." We therefore shall appreciate it if any reader of *CLINICAL MEDICINE* who has a good-sized specimen of sarcoma or carcinoma will send it to us while the weather is still cool, since no antiseptics of any kind may be used to preserve it.

Among the Books

SOME RECENT BOOKS ON TUBERCULIN

Tuberculin in the Diagnosis and Treatment of Tuberculosis. (Weber-Parkes Prize Essay, 1909. With Additions.) By W. Camac Wilkinson, B. A., M. D., F. R. C. P. London: James Nisbet & Co., Ltd. 1912. Price \$7.50.

Tuberculin in Diagnosis and Treatment. By Louis Hamman and Samuel Wolman. New York: D. Appleton & Co. 1912. Price \$3.00.

Sahli's Tuberculin Treatment; Including a Discussion of the Nature and Action of Tuberculin and of Immunity to Tuberculosis. By Dr. Hermann Sahli. Translated From the Third German Edition by Wilfred B. Christopherson. With an Introductory Note by Egbert Morland. New York: Wm. Wood & Co. 1912. Price \$3.00.

Ueber Tuberkulinbehandlung und ueber das Wesen des Tuberkulins und Seiner Wirkung, Sowie ueber Tuberkuloseheilung und Tuberkuloseimmunitaet. Vierte Umgearbeitete und Erweiterte Auflage. Von Prof. Dr. Hermann Sahli. Basel Benno Schwabe & Co. 1913. Price, in paper cover, Mk. 7.20.

Tuberculin Treatment. By Clive Riviere, M. D., F. R. C. P., and Egbert Morland, B. Sc., M. D. Second Edition. London: Oxford Medical Publications. 1913. Price \$2.00.

Tuberculin in Diagnosis and Treatment. By Francis Marion Pottenger, A. M., M. D., St. Louis: The C. V. Mosby Company. 1913. Price \$2.50.

Lehrbuch der Spezifischen Diagnostik und Therapie der Tuberkulose. Von Dr. Bandler und Dr. Roepke. Siebente Jaenzlich Umgearbeitete Auflage. Wuerzburg; Curt Kabitzsch. 1913. Price Mk. 9.50.

Grundriss der Spezifischen Diagnostik und Therapie der Tuberkulose. Von Prof. Dr. J. Petruschky. Leipzig: 1913.

As will be seen from the foregoing titles of recent textbooks on the use of tuberculin in the diagnosis and treatment of tuberculosis, one can no longer complain of a dearth of books upon the subject; and it appears evident that tuberculin—or, better, the specific treatment of tuberculosis by means of prepa-

rations obtained from the causative virus of the disease—has at last come into its own.

As is but natural in a subject that was so fiercely disputed, within our own memories, as that of tuberculin treatment, the opinions concerning the choice of preparations, the selection of cases, the mode of administration, and so on, vary within wide limits, and the recommendation of any single one of the existing textbooks to the general practitioner must, necessarily, depend upon the personal bias of the one making it.

It must be admitted that all the enumerated books offer excellent material for study, and it will be well for the physician to study one or more of them thoroughly, best under the guidance of a master, before approaching the difficult task of treating tuberculosis by means of specific remedies. We must not forget that tuberculin is a two-edged sword, potent for good and for evil, and that it should be used only after painstaking investigation of the principles involved in its action.

Two directions in the application of tuberculin as a remedial agent have developed in the course of time: one, which aims to secure a tolerance of tuberculin (toxin-tolerance, or *Gifffestigung*), either slowly and without causing appreciable reactions (Sahli) or briskly by means of deliberately, though carefully, produced reactions (Camac Wilkinson); the other, which doubts whether the deliberate production of a focal reaction is wise in pulmonary cases (Riviere and Morland), and which believes that good results are obtained by the slower methods, and with less risk (Hamman and Wolman).

For the general practitioner who administers tuberculin in ambulant cases, as a rule the slower method, by which distinct focal reactions are avoided, undoubtedly will be the wiser proceeding. In any case, specific remedies should not be employed until a clear conception is obtained of what they are expected and what they are able to do.

The various remedies grouped under the generic term tuberculin must be carefully differentiated, and we must realize that the action of culture products (old tuberculin) is essentially different from that of the body-substances (bacillus emulsion; watery ex-

tract of tubercle bacilli). As to the theory of tuberculin action, the reviewer's preference is for that of Wolff-Eisner, which has been adopted by Pottenger (as shown in his book), and which affords an excellent explanation and working-theory for practical application.

In general, it is to be remembered that not every case of tuberculosis is suitable for specific treatment. The patient's organism may be fully capable of responding to the irritation of the bacilli and their products; it may be able to form sufficient antibodies, or reaction-products, to "make its own immunity"; again, in far-advanced cases all power of reaction may be lost or the organism may be so flooded by antigens that the introduction of a further amount of the irritant would produce harm. In all these contingencies tuberculin in any form whatever is not indicated.

In other cases, the immunity is incomplete, although the power of reaction is fair. Then a suitable and proper course of specific treatment will aid in the completion of the immunity and in the destruction of the bacilli, as well as in the neutralization of their products. Healing of the tuberculous disease will then be promoted by specific treatment.

The theory of immunity, especially as it applies to tuberculosis, is so difficult that the reviewer wishes to warn against any rash attempts, and rather to advocate a course in a tuberculosis sanatorium where this form of treatment is followed. A few weeks will give the careful student a desirable training and will prove a splendid investment, for the advantage of the physician himself and of his patients.

In tuberculin treatment, possibly more than anywhere else, the strictest individualization is necessary, and it is impossible to follow the same schedule or diagram of dosage in every case presenting itself for treatment. In one, an immunizing response is obtained from small constant doses, time being allowed for the sensitiveness to tuberculin to return; whereas, in the other, increasing doses are given, at intervals so short that the tolerance produced by the previous dose has not yet disappeared.

The former mode is said to be chiefly applicable to localized tuberculosis without systemic intoxication, while the latter is claimed to be best in pulmonary tuberculosis in which there is disturbance of the general health from absorbed toxins.

The reviewer believes that it is a mistake to administer tuberculin so as to reach a given maximum dose at all events. He

believes that many patients do not require such an arbitrary maximal dose and that a smaller one is maximal for them. To learn to distinguish the individual needs of each patient and to carry his treatment to a successful termination constitutes the ability to use tuberculin.

CORRECTION: MOORE'S "BOVINE TUBERCULOSIS"

Through some error the price of Moore's "Bovine Tuberculosis, and Its Control" was incorrectly given as \$4.00. As a matter of fact, the price of this book is \$2.00. We are glad to call attention to this mistake, and to say another good word for the book itself, which is excellent.

AUERBACH: "HEADACHE"

Headache. Its Varieties, Their Nature, Recognition, and Treatment. By Dr. Siegmund Auerbach, chief of the Polyclinic for Nervous Diseases in Frankfurt a. M. Translated by Ernest Playfair, M. B., M. R. C. P., New York: Oxford University Press, London: Henry Frowde. 1913. Price \$1.50.

The patient who consults the doctor for headache is just as much entitled to diagnostic skill as the one who calls upon him to diagnose and cure some obscure affection in the right iliac fossa, and the case is not to be lightly dismissed with the most perfunctory attempt, or perhaps no attempt at all, at diagnosis and the most superficial kind of empirical treatment.

Granted that the most common cause of headache is an impaired activity of the gastric function or a rheumatoid induration of the scalp-muscles, the very next case presenting itself may be the premonitory warning of a renal function dangerously near to suspension. Headache, after all, is but a symptom and never should be allowed to pass for an entity; instead, the condition of which this pain is the outward and visible sign should thoroughly and carefully be canvassed.

This is the principle underlying Doctor Auerbach's little book. In his position, he, naturally, has had a very wide experience with headaches of all types and degrees in the course of his work in the Frankfurt neurology clinics, and he is qualified to speak with some intelligence and authority upon the nature and significance of this commonest of all neuronic manifestations—as generally misunderstood as it is common.

Headache is a subject in which every physician most decidedly is interested—the general practitioner perhaps more than any other. We commend this little book to his notice. Its careful perusal and the application of its teachings in practice will furnish the key to many an obscure diagnosis, hence, open the way to the relief of many a distressed victim.

SAUNDERS' NEW CATALOGS

The W. B. Saunders Company, publishers of Philadelphia and London, have just issued an entirely new 88-page illustrated catalog of their publications, and just as great care evidently has been taken in its production as this firm does in the manufacture of its books. It is extremely handsomely gotten up, and is a descriptive catalog in the truest sense, telling you just what you will find in the books enumerated and showing by specimen cuts the type of illustrations used. It is really an index to modern medical literature, describing some 250 books, including 30 new ones and new editions.

A postal sent to The W. B. Saunders Company, Philadelphia, will promptly bring a copy—and you should have one.

HENSON: "MALARIA"

Malaria: Its Etiology, Pathology, Diagnosis, Prophylaxis, and Treatment. By Graham E. Henson, M. D. With 27 illustrations. Saint Louis: The C. V. Mosby Company. 1913. Price \$2.50.

There is no doubt, as the author says in his preface, that malaria is the most serious problem that confronts the physician and the public health-officer in all tropical and subtropical countries; and there is, perhaps, no disease in which the map of our knowledge has undergone a more complete change within the last twenty years or so.

Practically every branch of medical research—and even some departments of scientific research outside of medicine—have contributed to the modern status of our understanding of malaria, necessitating a complete and radical revision of our former concepts of the subject, in all of its phases. Nor are these changes confined to the purely scientific aspects of etiology and pathology, but they affect in a very important way the more practical considerations of prophylaxis and treatment.

It is most desirable that all of these new data, and their clinical significance, should be assembled and set forth in orderly, coherent

fashion, for utilization in dealing with malaria; and this is the task that Doctor Henson, a resident of Jacksonville, Florida, has set himself in this monograph. How well he has succeeded, the book itself must eventually testify.

Personally, we feel that this is the best modern presentation of the subject that has yet been given to the profession and ought to prove of invaluable service to all physicians whose lot is cast in districts where malaria is a prevalent disease. We will go further, and predict that the book will contribute largely and importantly to the ultimate triumph of medicine and sanitation over a disease which as yet scarcely has been intelligently attacked.

POTTENGER "TUBERCULIN"

Tuberculin in Diagnosis and Treatment. By Francis Marion Pottenger, A. M., M. D. With 35 illustrations, including 1 plate in color. Saint Louis: The C. V. Mosby Company. 1913. Price \$3.00.

This monograph on tuberculin, which is dedicated to the memory of Robert Koch, will aid much in arousing a better understanding of what the use of tuberculin means. Coming, as it does, from a man who was among the earliest supporters of the specific treatment of tuberculosis, it reflects the results of a wide personal experience as well as a careful study of the work of others.

The author explains what can be expected from the use of tuberculin, what it accomplishes, and how it is to be used. It will be well to heed his warning, that to inject tuberculin does not mean treating tuberculosis; in other words, specific remedies can not be given "according to Hoyle," or by any rule of thumb, but in each instance they must carefully be adapted to the individual case under treatment.

The reviewer cannot enter into the various subjects discussed; that must be left to personal study. However, he wishes to express his regret that, in accordance with the prevailing custom, the author employs the term "tuberculin" in a generic sense for all products of the tubercle bacillus that are used in the diagnosis and treatment of tuberculosis. Strictly speaking, tuberculin, without qualification, stands always for the old tuberculin of Koch (TO, tuberculinum originale) and for its modifications, that is, for preparations obtained from the culture-medium on which tubercle bacilli have been grown. Substances prepared from the bacilli themselves are essentially different, Wolff-Eisner to the

contrary notwithstanding, and they should not be designated as tuberculin.

With this formal objection made, the reviewer wishes to congratulate the author upon the results of his industry, and the profession upon the acquisition of this valuable and important book—which, by the way, only gains by the addition of Professor Koch's original contributions to literature on the subject of tuberculin.

DAVIS: "HOW TO COLLECT A DOCTOR'S BILL"

How to Collect a Doctor Bill. By Frank P. Davis, M. D., secretary of the Oklahoma State Board of Medical Examiners. The Physicians' Drug News Company, Newark, N. J. 1913. Price \$1.00.

There is a well-borne-out proverb in general circulation, to the effect that, if you wish to make an enemy of a man, all you have to do is to lend him money. The end of such a transaction usually is that you, not he, become uncomfortably embarrassed; while he, not you, develops the idea that he is an injured person, and looks upon you as his enemy. The same denouement generally results from the unwise practice of rendering professional service and not collecting one's bill—which virtually amounts to lending the patient money.

All of which the average doctor knows well enough, but he frequently fails to make collections, for want of the tact or method that is necessary to make a good collector.

Here, then, is just the little book this doctor wants, written by a physician who knows the game and has played it successfully; a book full of the ripe, practical fruits of experience, in terse, usable form; and, moreover, there is appended a digest of the laws governing the game in the various states of the Union.

EYRE: "BACTERIOLOGICAL TECHNIQUE"

The Elements of Bacteriological Technique: A Laboratory Guide for Medical, Dental, and Technical Students. By J. W. H. Eyre, M. D., M. S., director of the bacteriological department of Guy's Hospital and lecturer on bacteriology in the Medical and Dental Schools. Second edition, rewritten and enlarged. Philadelphia and London: The W. B. Saunders Company. 1913. Price \$3.00.

A knowledge of bacteriology has become an essential to success in medicine. Not everyone need become a laboratory expert, but, certainly, everyone should be familiar with the principles of this branch of biology and be prepared to do the simpler tests if necessity arises. We know of no book upon the technic of bacteriology which gives the desired information in a more simple and easily accessible form than this one by Eyre. It is plainly written, carefully illustrated, completely covers the subject, and the information contained is arranged in such a careful manner that it can be utilized to the very best advantage.

It gives us particular pleasure to recommend this book.

"REFERENCE HANDBOOK OF THE MEDICAL SCIENCES"

A Reference Handbook of the Medical Sciences, Embracing the Entire Range of Scientific and Practical Medicine and Allied Sciences. By Various Writers. Third edition, completely revised and rewritten. Edited by Thomas Lathrop Stedman, A. M., M. D. Complete in 8 volumes. Volume II. New York: William Wood & Co. 1913.

The volume of this great compilation now before us takes in the whole of letter B and as far as chloroform, under C. Like the preceding volume of this colossal work, it is wonderfully complete, exceedingly well written, and thoroughly modern. In fact, it is possible to find in this work more information upon more subjects than in any book of the kind in our language, so far as we are familiar with the bibliography. Thus, take, for instance, the general subject of blood. There is, first, a general discussion of the character and constituents of the blood, covering 17 pages, or possibly more than 20,000 words—a good-sized book in itself. Then there is a long article upon the circulation of the blood, and a still longer one upon the clinical examination of the blood, this really being the best discussion of the subject we have seen anywhere; while other articles are upon blood-letting, blood pressure, blood stains, blood vascular system, and blood-vessels. Certainly, anyone who wants information concerning the blood will find here about everything he is likely to desire.

Assuredly, every physician who needs a reference-work (and what physician does not?) should possess this one, and it gives us much pleasure to commend it.

Condensed Queries Answered

While the editors make replies to these queries as they are able, they are very far from wishing to monopolize the stage and would be pleased to hear from any reader who can furnish further and better information. Moreover, we would urge those seeking advice to report their results, whether good or bad. In all cases please give the number of the query when writing anything concerning it. Positively no attention paid to anonymous letters.

Queries

QUERY 5996.—“Significance of Chest Pain.” M. S., Kansas, desires light on two conditions that he finds most common and, yet, hard to relieve; to wit:

The patient complains of a severe pain in the chest either on the right or the left side in the region of the fourth or fifth ribs, near the mammillary line. Sometimes the pain is nearly constant and sharp, sometimes dull and aching. At times he cannot lie on the affected side. There are no other symptoms, except for some gas in the hepatic or splenic flexure of the colon. Frequently the pain is severe on walking or raising his arms. The doctor nearly always “treats for flatulence,” without, in many cases, being able to demonstrate any special disease. Accepted treatment for pleurodynia affords no relief, but drugs directed against gas formation in the bowels do. He has always thought it a symptom of stomach or some colon disease, but frequently no other symptoms are present.

A woman has had a pain in her right chest off and on for one year; sometimes it is worse than at others. The only other symptom she has is, a little gas in the hepatic flexure of the colon, and an exceedingly painful tenth rib, on its lower border over the gall-bladder. The pain was worse when she wore a corset, but she does not wear one now, but the pain persists.

As to pain in the chest on the right side, that may have an entirely different origin than pain felt on the left side, even though the painful area be “at about the fourth or fifth rib in the mammillary line” in each instance.

Cardiac pain may be closely simulated by the pseudoangina of anemic, gastric, hysteric or toxic origin, and may cause pain under the sternum, in the right shoulder, and in the right hypochondrium. Thoracic aneurism may give rise to pain beneath the sternum or between the shoulders, but the other symp-

toms enable you readily to recognize the condition.

Pain in the region described, upon the right side, may be due to gallstones, cholecystitis, functional diseases of the liver (i. e., passive congestion, or inflammatory, suppurative, syphilitic or malignant disease), cirrhosis, very tight lacing, chronic pleurisy, impacted hepatic colon, gastropnoia, carcinoma either of stomach, pylorus, duodenum, pancreas or colon, to aneurism, movable kidney, uremia, pyelitis or so-called “rheumatism.” Impaction of the colon may cause pain in the right or the left hypochondrium, while flatus in the splenic flexure may induce precordial pain. Oftentimes pain ranges from the mammillary line down to the right hypochondrium.

We would suggest that you study the chapters on pain accompanying diagrams in “Diagnostics of Internal Medicine,” by Butler. If you will make a thorough examination of the woman who has severe pain about the tenth rib, and then give us a clear clinical picture, we shall be pleased to make definite diagnostic and therapeutic suggestions.

QUERY 5997. — “Periodic Hematemesis. Autotoxemia?” D. B. E., Tennessee, has under his care (Case 1) a man 27 years of age who has taken treatment, from a prominent physician, for ulcerated stomach; our correspondent thinks, however, that he has a stricture of the esophagus. The man is unable to swallow solid foods, often even choking on soft food or milk. He is pale and thin. He vomits up a great amount (over a pint) of black blood and mucus virtually once a month; then, after he has vomited, he feels pretty good for a few days, when he begins to experience a sense of fullness and burning in his stomach. This increases

until finally he is in great misery, which is relieved only by another spell of vomiting.

"No doubt," the Doctor continues, "the man has ulcer of the stomach, but he surely must have some trouble with his esophagus, too. There is no history of tuberculosis, syphilis or injury; lungs are normal; no pain is felt at any point except in the pit of the stomach. Would the use of the vibrator prove beneficial?"

Case 2. "Woman 42 years of age, whose left ovary has been removed, and a cyst from the right one. Menstruation occurs regularly. Gets 'spells,' when she burns like fire' nearly all over her body and she jerks terrifically—at the same time her abdomen beats tumultuously, 'nearly being jerked to pieces'; eventually her head will begin to jerk. The woman has had five children, and all were normal deliveries."

Frankly, doctor, we are at a loss to explain the periodically recurring hematemesis in your first case. We do not see any really definite indication of esophageal involvement; nor would bleeding occur from a single round ulcer at definite and long intervals.

Under the circumstances, we are inclined to diagnose acute (hemorrhagic) erosion, the lesion probably existing near the cardia; patients presenting no definite gastric symptoms may suddenly vomit from a pint to a quart of blood. This condition is usually observed in individuals from 25 to 30 years of age. Such hemorrhages may prove fatal or the patient may recover and be subject to recurrences. This condition cannot definitely be differentiated from latent ulcer.

As we have pointed out, ordinary cases of gastric ulcer have a definite symptomatology, something not observed in acute erosion. In chronic erosion, no hemorrhages occur. The etiology is unknown; but frequently a toxic element is responsible. Frequently regurgitation is observed in such cases.

You do not state, doctor, whether hypo- or hyperchlorhydria exists; neither do you give us any idea of the pathologic conditions as revealed by the examination of the stomach contents. However, under the prevailing circumstances, we certainly should not use a vibrator. Furthermore, it is our judgment that the sooner this patient submits to operation, the better his chances of recovery.

In gastric ulcer proper, as, of course, you are aware, pain ordinarily occurs within a few minutes after eating and persists during digestion; epigastric pain is increased on pressure, and the sensitive point usually is

distinctly circumscribed. Within a few weeks, dorsal pain makes its appearance; this being gnawing in character and located to the left of the spine, between the eighth and the tenth vertebra. This pain is relieved by vomiting. Furthermore, constipation and anemia are marked, while the appetite is favorable.

You have failed to state, doctor, whether the patient's stools have been examined for occult blood. We note, also, that you do not mention the existence of melena. Really, this is a most interesting case, and we shall be pleased to cooperate with you, to the extent of our ability, in the light of more definite clinical data.

In case 2, you probably have to do with a condition of intense autointoxemia. Make a very thorough physical examination, paying particular attention to the woman's pelvic organs; test the reflexes; take the blood pressure; then accompany these data with a specimen of urine for our pathologist. See whether you can discover tenderness on deep pressure along the vertebræ. Thorough elimination and such sedatives as solanine, scutellaroid, and the bromides in small doses, with neuro-lecithin, might be tried with advantage.

QUERY 5998.—"Epistaxis." D. C., Connecticut, has a patient who, he declares, for a year past, "bleeds from the right nostril at the slightest movement." Treatment, for six months, by a specialist has given no relief whatever. Then a course of calcium lactate (grs. 15) and hydrastinine hydrochloride (gr. 1-2), taken three times a day, helped to improve the condition, checking the hemorrhage when he is not at work. But, as soon as the man exerts himself, bleeding occurs about three times per day. Local applications are of no avail.

As you can readily understand, doctor, treatment, to be effective, must be based upon a clear conception of the causative condition. A small hemorrhagic area may exist in the nostril; if so, this should be cauterized. Be sure to examine the patient's nares carefully by reflected light.

The fact that the hemorrhage occurs only from one (right) nostril would seem to exclude hemophilia, while we may assume that traumatic ulceration (syphilis, foreign body, and the like), adenoids or rhinitis—especially the atrophic form—would have been recognized by the specialist.

As you are aware, epistaxis reaches its

maximum at puberty, being less often met with after that period, until the advent of advanced life, when it may be a serious symptom. The affection is more common in males than in females. It is absolutely essential to decide whether the hemorrhage is dependent upon local conditions or owing to constitutional causes. Save in diphtheria and malignant infection, it usually is comparatively easy to stop the bleeding; in fact, the prognosis practically always is good. If the bleeding is of local origin, multiple telangiectasis probably is the cause.

The general causes are: (1) High arterial tension, (arteriosclerosis, hepatic cirrhosis, chronic interstitial nephritis, and the like); (2) high venous pressure (mitral stenosis, bronchitis, whooping-cough, thoracic aneurysm, tumors of the neck); (3) toxic blood diseases (pernicious anemia, chlorosis, purpura, leukemia, hemophilia, malaria, exanthema, and the like). Occasionally the condition arises from the ingestion of large amounts of quinine, salicylates, chloralamide or of phosphorus.

In 90 percent of all cases, the bleeding point will be found on the anterior portion of the cartilaginous septum, the spot known as Kiesselbach's area. This spot will be found about a quarter of an inch within the vestibule and an equal distance from the floor of the nose. The mucous membrane here is very thin and the little vessel (a branch of the internal sphenopalatine) anastomoses with a branch of the superior coronary. The junction sometimes is marked by a distinct varicosity. This vessel has been called the "artery of epistaxis."

If the bleeding point can be definitely ascertained, and the hemorrhage is not controlled by the application of adrenalin and cocaine solution (or other agent), then apply the galvanocautery at cherry-red heat. A silver probe heated to a dull-red may be used the same way. Failing these, apply a pointed stick of silver nitrate or touch with chromic or trichloroacetic acid. The patient should not be allowed to blow the nose for two or three days afterward. The mucosa may be kept moist by the application of camphormenthol. For the anemia following continued hemorrhages, give the arsenates of iron, quinine and strychnine, with nuclein, and order a highly nutritious diet.

In epistaxis of cirrhosis of the liver, mop out the nostril with a pledget saturated with anethaine and adrenalin-chloride solution (1 : 5000), then plug with a tampon moistened with the following mixture:

Sodii chloridi.....	grs. 11
Gelatin.....	drs. 2
Distilled water.....	drs. 3 1-2

Unfortunately, doctor, you do not tell us the age of your patient or his general condition.

In ordinary cases, atropine hypodermically or in full doses by mouth proves promptly effective. If the face is flushed and cerebral congestion is marked, gelseminine should be given and followed by hydrastoid or hydrastinine hydrochloride.

In the epistaxis of childhood and in plethoric individuals, give minute doses of aconitine; eupurpuroid, collinsoid, and hamameloid may be administered for their tonic effect on the mucosa.

Locally, stypticin, alum, and tannic acid or a solution of antipyrin (20 grains to the ounce) prove useful; suprarenal solution also is excellent. Sometimes it is necessary to plug the posterior nares with a sponge or cotton tampon. As stated, if a persistently bleeding area can be discovered, this must be touched with the actual cautery, chromic acid or a solid stick of nitrate of silver.

When general congestion is present, together with high blood pressure, thorough catharsis always is desirable.

QUERY 5999.—"Chronic Ulcers of Extremities." F. E. McC., Montana, asks advice in the case of a 36-year-old married woman doing housework. When she was 9 years old she suffered from sore throat, which, she declares, was not specific; but since then has been in perfect general health, not being troubled with headaches, constipation, indigestion or rheumatism. Her tongue I find clean. However, for the last ten years small ulcers have continued to break out on the soles as well as tops and sides of both feet; and within the last four years these sores have been ascending upward and are now a little above the ankles. The patient has no varicose veins or other circulatory disturbance.

The ulcers are about the size of a dime, form without much inflammation, are rather whitish at first and eventually rupture, forming a little sloughing area; the pus is yellow and small in amount. The lesions gradually dry up, then new ones will form. A dark-colored scar is left after some of them. The patient's urine is rather scant (about 2 pints in twenty-four hours), of 1010 specific gravity, free from sugar and albumin; only slightly acid. The patient is somewhat

restless at night, but suffers no pain in the feet. The ulcers are not sensitive.

It would be unwise for us to venture a definite diagnosis upon the facts presented. We suggest that you send to our pathologist, for examination, a blood smear, a specimen of pus from one of the recent ulcers, and also a specimen of urine (4 ounces from the combined 24-hour output, stating the total quantity voided). Make a note of the pulse rate; also, if possible, ascertain the blood pressure. What is the family history? Is there any disorder of the pelvic organs? Be very certain upon this latter point, doctor.

On the whole, we are inclined to think that an autogenous bacterin and saturation of the patient with echinacoid would prove promptly beneficial. Arsenic—either the sulphide of arsenic or the liquor arsenii compound (Barclay)—should be given as alternants.

QUERY 6000.—“Diphtheria Antitoxin and Amenorrhea.” L. L. B., Iowa, asks whether diphtheria antitoxin causes amenorrhea. He tells of a girl 20 years of age who had diphtheria in December and who has not menstruated since then, although she always was regular previous to her illness. She is able to be about, but is weak, has no appetite, is sleepless, slightly anemic, has had no menstrual pains and experienced no “heaviness” in pelvis or back. Our correspondent did not treat her for the diphtheria, hence, cannot say how ill she was or how much antitoxin she received. He is giving her a general iron tonic and a gentle laxative.

As to the diphtheria antitoxin, that positively does not cause amenorrhea; however, this as well as other pathologic conditions not infrequently follow when an insufficient amount (units) of antitoxin has been employed in combating the disease.

The antitoxin, as you know, directly neutralizes the toxins engendered by the bacilli, and it is necessary to administer sufficient of it, not alone to modify the disease-process, but to prevent as fully as possible further injury to the cells. It is wiser, therefore, always to give larger doses of the antitoxin than might seem necessary. In distinctly toxic cases, it should be employed in maximum dosage, and the administration be repeated.

If the patient is not seen early, extensive destruction of the nerve-cells may have occurred before antitoxin can be resorted to. Of course, this agent can not initiate repair,

its only function being to prevent further destruction. Consequently, we must regard amenorrhea, paralysis, and other pathologic conditions observed after diphtheria as a result of the action of the toxins generated by the Klebs-Loeffler bacillus, and the early and free administration of antitoxin as the best preventive.

You will find an exhaustive chapter on the use of serum therapy in diphtheria in Hare's “Modern Treatment,” from which we quote a few passages: “It is very difficult to estimate correctly the amount of antitoxin which should be given, as there is no way of knowing how much toxin has been absorbed by the blood and taken up by the tissues. We know that the larger the amount of antitoxin injected into the tissues, the more rapidly will a considerable amount be absorbed into the blood and pass into the body-fluids. Only a small percentage of what is in the blood passes out of the vessels into the tissues. It is for this reason that, if we would neutralize toxin which has passed from the blood stream, but has not yet united with the tissue-cells, very much more antitoxin should be given than would be required in the test tube to neutralize the toxin. It is also debated as to whether all the antitoxin required should be given in one dose or should be given in divided doses. Theoretically, it would be proper to give sufficient in the first dose to suffice, but practically it is difficult to judge the necessary amount, and, unless we give larger doses than are required, we fail to give sufficient for the needs of the exceptional cases.”

Reverting to your patient, it is probable that she will respond to full doses of nuclein and sanguiferrin, to be followed (possibly) by viburnoid, aleteroid, and anemonin. Besides, she should spend a great deal of her time in the open air, be instructed to breathe deeply, and receive an extremely liberal diet.

If you care to make a thorough examination of the patient and will send a specimen of urine (4 ounces from the 24-hour output, stating the total quantity voided), together with a specimen of her blood, we may be able to make some useful therapeutic suggestion.

QUERY 6001.—“Pollakiuria.” W. P. B., Illinois, has recently read in CLINICAL MEDICINE a note on the treatment of women troubled with a frequent desire to urinate. He happens to have such a woman under treatment and finds that, in spite of everything he does, the condition continues. And

"if you can help me out," he writes, "I shall be more than grateful."

It is difficult to treat polyuria, or, rather, undue frequency of urination (pollakiuria) without having a clear understanding of the causative conditions. Thus, for instance, frequency of urination may be caused by (1) diseases of the tract itself; (2) diseases independent of the urinary tract; (3) disease outside of the urinary tract that interfere with its functions.

As a rule, the bladder is responsible for undue frequency of micturition, most of the trouble being situated in the part below the middle zone of the organ in health when filled with fluid. Diseases of the kidney (interstitial nephritis, tuberculous nephritis in its earlier stages, nephrolithiasis, movable kidney, etc.) may be causative. Vesical calculus or polypus (especially if situated near the vesical outlet) are frequent causes of pollakiuria.

In women, nervous disorders (hysteria, neurasthenia, and the like) may give rise to an increased amount of urine or to frequent voiding of small quantities. The character of the urine itself may be responsible; highly acid urine or one containing calcium oxalate, uric acid or indican (the result of faulty metabolism), this causing irritation not only of the kidney but of the vesical mucosa; and subsequent pollakiuria. Infections or congestions of the urethra, presence of caruncles, forward displacement of the uterus, enteropositis, the wearing of ill-fitting tightly laced corsets, cystocele, and a score of other causes may be responsible for the condition.

Displaced uterus, especially when it tips forward in such a way as to rest on the bladder, may cause almost constant desire to micturate. Again, if the uterus has fallen backward and pulls the bladder with it, the discomfort from pressure on the pelvic plexus becomes intense; residual urine, accumulating in the back of the bladder, accentuates the desire to urinate.

Inflammation of the tube, or an intrapelvic tumor pressing upon the bladder may give rise to frequent urination. Not frequently the dilated sigmoid flexure may press upon the bladder and give rise to pollakiuria. This is a somewhat more frequent cause than is generally recognized, and should not be forgotten. In women, the sigmoid loop may be bound down by adhesions following salpingitis. As a matter of fact, doctor, it would be necessary to write a small volume to consider the subject in detail.

In every instance, examine both the patient

and his urine carefully, and base your treatment upon the conditions present in the individual. You will find a remarkably interesting chapter upon disturbance of micturition, with tables illustrating the different causes of frequency of urination, in Guiteras' "Urology."

Many times a course of arbutin and the application of a snugly fitting light elastic belt will prove beneficial. Constipation always must be corrected, and nervous, overworked women should receive a course of the arsenates with nuclein.

QUERY 6002.—"Gonococcus Infection of the Mouth." W. W. B., describes a case of gonorrhea of the mouth in a man 30 years of age and asks for therapeutic suggestions. For several months he has used the astringent and antiseptic washes: protargol, argyrol, boric acid with alum, thymol, potassium permanganate, zinc sulphate, carbolic acid in solution with sodium bicarbonate, hydrastis, tannic acid and glycerin, tincture of iodine, and other drugs. The whole buccal mucous membrane has been painted with a mixture of iodine (40 parts), glycerin (55 parts), and carbolic acid (5 parts), with bichloride of mercury (1 : 2000) solution, and acetozone solutions as strong as 1 : 5000, but all without relieving the condition. The patient has received gonorrhea phylacogens (as much as 10 Cc. daily), until now it fails to give any reaction, except a slight muscular soreness. His general health is good, he is of regular habits and does not use liquors or tobacco at all. Our correspondent concludes by saying: "I have always been of the opinion that buccal gonorrhea was very easily cured, but find it otherwise."

First of all, we would ask whether you have any definite evidence of the continued presence of the bacillus Neisser in this case. It is the consensus of opinion that only the mouths of newborn and very young children are susceptible to the gonococcus.

Osler, Musser-Kelly, and the "Hand Book of Medical Sciences" do not even mention the subject. According to the "Index Medicus" for 1911, two reports appeared in the literature for that year: "Un cas de blennorrhagie buccale.—Malherbe, *Gaz. Med. de Nantes*, 1911, 2, pp. 801 to 805." "Genuine gonorrhoeische stomatitis beim erwachsenen.—Zilz, *Oester.-Hunger. Viertelj. f. Zahnärzte*, Vienna, 1911, pp. 174 to 193." The "Index Catalog" of the Surgeon-Generals's Library, the volume devoted to subjects under "G 2" lists a few articles on the subject.

In Blair's "Surgery and Diseases of the Mouth and Jaws," page 294, the following statement is made: "Gonorrhea, apparently, occasionally occurs in the mouths of newborn infants—rarely in adults. The mucous membrane is swollen and red and in places there occur superficial ulcerations. The secretions are said to show the presence of the gonococcus, and a purulent stomatitis in the newly born should be examined for it."

According to Pfaundler and Schlossman, there is often present in the mouths of infants a coccus closely resembling the gonococcus, and to them the evidence so far produced is not conclusive that the disease described under this head really is a true gonorrheal stomatitis.

Treatment consists in cleansing the mouth with a 10-percent borax solution and in touching the ulcers with a 2-percent solution of silver nitrate. The prognosis seems good.

McCurdy, in "Oral Surgery" (p. 35) says: "Other mucous membranes are susceptible to the infection—the eye, rectum, and anus. Cases have been reported of gonorrheal infection of the mouth and nose, but proof is not conclusive that these mucous membranes are susceptible to infection by the gonococcus."

On page 135 a table of the differential diagnosis of diseases in the mouth appears, in which it is stated that gonorrheal stomatitis may appear at any age, the mucosa presenting a dark-red appearance, the lesion being diffused, with illy defined margin; course is acute, involvement general. Temperature is normal or slightly accentuated. Thus you will readily understand that it is essential to differentiate between catarrhal pseudomembranous stomatitis and catarrhal ulcerative stomatitis of the gonorrheal variety; the latter condition, as we have already pointed out, being rarely observed.

If you will give us a clearer idea of the conditions you have to contend with, and send to our pathologist clippings and scrapings from the affected surface, we may be able to aid you more intelligently. It may be necessary for you to make a culture before a definite diagnosis can be arrived at.

QUERY 6003.—"Salammoniac for Sobering Up." J. C. W., Tennessee, has heard something about ammonium chloride being useful for sobering up a drunken person, and wishes for further details, if available.

One of the most widely used sobering-up draughts is greatly diluted aromatic spirit of ammonia, which is a diffusive stimulant,

with the aromatics serving largely (here) as flavors. (The chloride of ammonium presumably would act in the same manner, by virtue of the ammonium base.) Capsicum and strychnine also are favorites for this purpose. Now to answer our correspondent.

Some two or three years ago (we believe) a certain Dr. Hennell gave out what seems to be a new means of dispelling intoxication; and these in effect are the suggestions as they were, at the time, published in some of the pharmaceutical journals:

The dose of the ammonium chloride is from 1-2 to 1 dram, dissolved in a wineglassful of water, followed by a copious draught of cold water. However, a smaller dose of from 5 to 10 grains is said often to be sufficient. The claim is made that this—possibly once repeated—sobers the person in short time, while also obviating impending delirium tremens. Should the patient not be calmed in about two or three hours, administration of some hypnotic is recommended.

QUERY 6004.—"Somnolence Following the Administration of Cough Remedy." F. A. K., New York, tells us that he has dispensed the Blackham formula for cough, dissolving eight granules in one-half glass of water and giving 1 dram of this hourly to children 4 to 6 years of age, and that he has had several marked cases of somnolency from this.

Inasmuch as each granule of this combination contains 1-100 grain of morphine sulphate, eight granules in 4 ounces of water would mean that the child got 1-100 of a grain of the alkaloid hourly. Naturally, since morphine is comparatively slowly eliminated and affects young children quite readily, the soporific effect may be expected after the sixth or eighth dose of the drug.

As a matter of fact, the Blackham cough combination should not be given to young children, except under very exceptional circumstances; and there are many more desirable combinations for the purpose.

If you desire to use the Blackham cough preparation, we suggest that you follow Shaller's rule for the dosage of all poisonous alkaloids; namely, give 1 granule for each year of the child's age, and 1 "for the glass" in 24 teaspoonfuls of water. From 1-4 to 1 teaspoonful of this solution may be given every two hours to effect.

We should always give remedies calculated to remove the pathological conditions causing the cough, which, after all, is a symptom only.